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THE
MEDICAL
AND
CHIRURGICAL
REVIEW;
Lying-In CONTAINING *Hospital*
A COPIOUS ACCOUNT
OF THE
VARIOUS PUBLICATIONS
IN DIFFERENT LANGUAGES
ON MEDICINE AND SURGERY.

VOL. I.

From MAY 1794, to MAY 1795.

— quæ non fecimus ipsi
vix ea nostra voco ————— OVID.

LONDON:

Printed for the EDITORS; and Sold by T. BOOSEY, Broad
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1795.



P R E F A C E.

ALTHOUGH Medicine has been cultivated in all ages, for in all ages it must have been necessary, a very slight acquaintance with the subject will serve to shew, that it has not yet attained perfection. Its improvement must be gradual, and the work of many hands. The ingenuity and labour of an individual may enlarge his own stock of information; but they will add little to the general mass of knowledge, unless some means are found to communicate to practitioners in general the result of his enquiries. Diffusion, therefore, is equally requisite to the progress of Science with investigation and discovery. It is, however, a subject of regret, that the information wanted is scattered through an immense number of volumes, and in various languages. Hence a complete view of all the improvements in Medicine can only be obtained at a great expence, and with much labour.

It must be the wish of every practitioner to become acquainted with every useful discovery which time or attention has brought to light: but the greater number can have neither leisure nor

opportunity for the very extensive reading which would be necessary for the attaining this end. Any means, therefore, of communicating the discoveries which arise, unburthened with the expence, and without the necessity of recurring to a great number of books, must tend to the improvement of the art. This end can be answered by periodical and compendious publications alone.

Works of this kind have been published on the Continent with some success, but from the distance, and other causes, they have paid but little attention to British authors; yet it will hardly be denied, that medicine is cultivated with at least as much ardour, and as much success, in this as in any other country of Europe. We have no publication among ourselves sufficiently extensive for the general purposes we have mentioned. The ordinary Reviews have little room to devote to particular Sciences; besides, an objection of greater weight lies against them; which is, that their accounts of books are too controversial to admit of an analytical view of the work of which they treat. The other periodical publications which are strictly medical, devote a principal part of their attention to the reception of original articles; accounts of new books have been only a secondary consideration. The present work, therefore, is not, we think, superseded by any

any that has previously appeared. That this is the opinion of a great number of practitioners, is proved by the reception it has already met with. It remains, then, for us to lay down the plan we mean to pursue, which we hope is such as will be most useful.

We propose to give a summary view of all the books in the different branches of Medicine published in Great Britain and Ireland, and of such papers relating to the subject as can be found in the miscellaneous collections of different learned Societies. We shall do the same with regard to such foreign publications as we can procure; and for the rest, we must take our accounts from the different works of a nature similar to the present which are published on the Continent. We have had frequent occasion to lament the difficulties which at present are felt with regard to these, owing to the deranged state of communication between the different parts of Europe, which has rendered this part of our work much less complete than could have been wished, but which we trust our Readers will see was unavoidable.

We think it necessary to declare, that criticism will be a matter of inferior consideration, for reasons sufficiently obvious. A work of this kind will, we are persuaded, be most useful in giving an analytical and compendious view of each book; of the improvements it suggests, and of

of the principal arguments by which they are supported : in a word, such an account as will enable the Reader, in a great measure, to judge for himself. Were we to combat every opinion which we think erroneous, our work must be extended to an immeasurable length. An opinion can be delivered in a few words ; to overturn it might require pages.

It is to men, fully employed in practice, and remote from the center of publication, that a work of this kind is principally serviceable ; and to such the greater part of new books must be inaccessible. To others it would serve as an index to point out the articles most worthy of their attention. Without the aid of a work of this kind, we have no doubt that the majority of practitioners would be unacquainted with the existence even of many a valuable publication.

We presume not to flatter ourselves that our plan will meet with general approbation. We shall, however, gladly attend to every hint that may be suggested for its improvement. We shall thankfully receive any account of publications which may escape our notice ; and this must often happen with regard to foreign books. A compendious account of such we shall esteem a particular favour. It will be the study of the Editors to render the work worthy of the public attention, by rendering it an epitome of the advancements made in medical and chirurgical knowledge.

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T H E

MEDICAL and CHIRURGICAL

R E V I E W.

ART. I.

Surgical and Physiological Essays by John Abernethy, professor of Anatomy to the Corporation of Surgeons; Assistant Surgeon to St. Bartholomew's Hospital, and Lecturer in Anatomy and Surgery. 8 vo. p. 106. 3s. 6d. EVANS.

THE Work before us consists of only two Essays; one *On the Lumbar Abscess* — the other, “*On the Composition and Analyfis of Animal Matter.*” The Author sets out with observing, that “some cases of Lumbar Abscess, which “of late occurred in St. Bartholomew’s Hospital, “particularly excited my attention to that disease, and induced me to pursue in it a practice, “which, I think, will be found of considerable “utility.”

VOL. I.

A

“I have

" I have long waited for opportunities of more
 " frequently prosecuting the practice, recom-
 " mended in the following pages; however, as
 " the occurrence of cases of particular disease to
 " any individual, is so fortuitous, and, at certain
 " times, so rare, and as the practice hereafter re-
 " lated, appears to me so uniformly beneficial,
 " I have resolved no longer to delay the publica-
 " tion of the following cases and remarks —
 " other motives also induce me to this determina-
 " tion; I submitted this paper to the discussion of
 " the *Lyceum Medicum Londinense*, and it gave
 " me much pleasure to hear, from several mem-
 " bers of that society, that the treatment, which I
 " had proposed in these complaints, had been re-
 " peated with success in several parts of England.
 " If the recommended practice could in all cases
 " be perfectly accomplished, I believe it can be
 " clearly demonstrated, that the Lumbar Abscess,
 " (a disease hitherto so much dreaded) would be
 " reduced to a disease of little danger or import-
 " ance. But many, apparently minute, circum-
 " stances may frustrate the intended plan of
 " treatment. I think it right to apprise the prac-
 " titioner of the necessity of attending to these
 " minutiae; and also, to lay before the public
 " the information which I have derived from my
 " present degree of experience in those diseases."

" Whilst the condensed cellular substance
 " which forms the Cyst of an Abscess remains
 " entire,

" entire, it continues free from inflammation,
 " and the contained pus suffers no putrefaction,
 " nor evident alteration of quality. Some Lum-
 " bar Abscesses contain two quarts, or more, of
 " matter. The surface of the containing Cyst
 " must, in such cases, be very extensive; when-
 " ever the Abscess is opened, either by ulcer-
 " ation, or by the hand of the surgeon, a sudden
 " and generally considerable, inflammation ex-
 " tends itself over the whole Cyst; this is fol-
 " lowed by a copious discharge of, frequently
 " foetid, pus. Now this immediate inflammation,
 " and consequent discharge, cannot but greatly
 " derange and exhaust the constitution of the pa-
 " tient, which is generally irritable, and already
 " much enfeebled, by the efforts attending the
 " formation of the disease. — It is well known,
 " that when we evacuate fluids from the cavities
 " of the body, if we immediately close the ap-
 " perture, through which they were discharged,
 " we prevent the inflammation which would
 " otherwise ensue. The evacuation of water from
 " the Abdomen and Tunica vaginalis Testis may
 " be adduced as instances of the truth of this re-
 " mark. It is also well known, that if the matter
 " of an Abscess be discharged, its cavity becomes
 " much diminished by the contraction of its Cyst.
 " It will hereafter be shewn, that this contraction
 " will be greater in Chronic Lumbar Abscesses,
 " than in those of a more phlegmonoid nature,

" since in the former, the Cyst having sustained less inflammation, and having undergone less alteration of structure, will be more likely to possess and exert its natural elasticity; and thus greatly diminish the cavity of the Abscess."

" On those two observations, the practice, hereafter related, is founded; it occurred to me, that if, after the evacuation of a Lumbar Abscess, the aperture were directly closed, and its immediate union procured, that no inflammation of the Cyst would follow, which being now relieved from pressure, would, by its contraction and rarefaction, greatly diminish the cavity: the pus, doubtless, would speedily re-accumulate, yet, I thought, by repeatedly evacuating this fluid, before distension of the Cyst could happen, the cavity would be so much reduced, and the Cyst be made so much less extensive, that the future admission of air would be productive, comparatively, of but little consequence."

In illustration of the above opinions and practice, the Author has adduced six cases, which fell under his observation at St. Bartholomew's Hospital; in all of which however, the event was not equally favourable. In the first case, the discharge of eight ounces of matter had been effected from beneath Poupart's ligament, by the application of a caustic. The sides of the Eschar

now

now closed up the wound, and prevented any further evacuation of matter. For three days the patient remained perfectly well, and his thigh free from inflammation ; -- On the fourth day the Eschar separated, and eight ounces more of pus, mild and inodorous as at first, was discharged. In twelve hours after this detachment of the Eschar, he suffered much from fever and pain in the part, and the discharge became putrid. The hectic fever continued, the discharge from the Abscess became profuse, and he died in about six weeks.

The second case was of a man, who had a constant cough, and undoubtedly, much diseased lungs. The Abscess was tapped with a small hydrocele trocar, and three pints of pus, of good quality, were discharged. The part was dressed with considerable caution. Lint, moistened with the Tinctura Benzöes was applied to the orifice, over that some sticking plaster, which was afterwards varnished over with gum. Some compresses of linen were applied over the Abscess, and gently bound on by a flannel roller. The Abscess remained without pain or inflammation, and the constitution free from fever. Sixteen days after the first discharge, the Abscess was again punctured, and nine ounces of fluid discharged, in appearance and chemical properties much resembling blood. This puncture also readily healed. Between four and five weeks after

the second operation a puncture was again made, and ten ounces were evacuated of a lymphatic exhalation, rather dark coloured, and turbid, as if mixed with true pus. A fortnight after the former evacuation, were discharged four ounces of similar serous fluid, mixed with pus. Thus after discharging the matter four times, the complaint was reduced from a Lumbar Abscess containing three pints, to a small collection of matter beneath the fascia of the thigh, containing four ounces. Four ounces more of matter were discharged by puncture, the following month, and soon afterwards the Abscess was opened by an extensive incision, so as by granulation to produce an union of the sides, which was effected with little difficulty and without any derangement of the system.

In the third case, the pus had been evacuated five times, a week intervening between each time of puncturing, but the patient died, apparently from debility.

The subject of the fourth case, for four months previous to his admission into the hospital, had profuse night sweats. Between two and three pints of healthy matter were evacuated by the introduction of the trochar; the wound was immediately closed, and lint and adhesive plaster were applied. For ten days following he had no night sweats, which then returned, although in a less

a less degree than formerly. Three weeks after the first discharge the tumour had become nearly of its original size; the integuments were much distended; the part punctured had, for three days, appeared inflamed, and the tumour being compressed, the cicatrix gave way. The trochar was again introduced through the former orifice, and eight ounces of brownish matter discharged. After the second evacuation, the night sweats were again discontinued. Four or five days afterwards, whilst in the act of coughing, the imperfectly healed wound gave way. Very little pus was discharged, but as it was impossible to heal this ulcerated opening, the mode of treatment hitherto pursued was frustrated. Much inflammation of this Cyst immediately took place, with great derangement of the constitution. These gradually abated. At the end of about eight days he was much amended, and in about six weeks the Abscess appeared nearly well, and the constitution relieved from febrile indisposition.

In the fifth case, the lower part of the tumour was punctured with a lancet, carrying it obliquely about half an inch between the skin and the fascia. Eleven ounces of good pus were discharged, but the Abscess was not emptied. On the third day, by a fit of coughing, the orifice was burst open. The lancet was again introduced at the same orifice, and five ounces of pus were discharged. Seven days afterwards the tu-
mour

mour was again punctured, and eight ounces of fluid evacuated. No apparent collection being made, after a week more, a lancet was introduced through the fascia of the thigh, with a design to admit the air into the cavity of the Abscess that remained. Nearly a table-spoon full of matter continued to discharge daily for about a fortnight, and afterwards it gradually diminished and the wound healed. No fever arose in consequence of the last opening.

In the sixth case the matter had been evacuated three times, with intervals of about a fortnight. The first time were discharged twenty four ounces, the second time between eight and nine, and the third time six ounces. No symptoms of general disease were produced in consequence of either of these operations, and a month after, the tumor being much less prominent than before, a seton was passed through the cavity, and a cure took place in about three weeks.

The Author concludes this Essay with some general remarks on the Lumbar Abscess. He observes, the prevailing opinion has been that the matter originated from a disease of the spine.

This, however, he thinks is very rarely the case, since in nine succeeding cases, to which he was particularly attentive, there was not the least reason to suppose that any such disease existed.

He attributes the hectic fever, and other violent symptoms, which follow the spontaneous, or ordinary artificial opening of these Abscesses, to the exposure of an extensive cavity, analogous to what happens in various other instances : that the Cyst of a Lumbar Abscess is in a state much more favourable for contraction, than the cavity of a common phlegmonoid Abscess ; as, in the former, the surrounding parts have suffered little from previous inflammation. He observes that a compleat evacuation of the matter is necessary, as otherwise, the remainder might continue to drain off through the orifice, or be forcibly impelled through it, in the time of coughing, or other exertion, and thereby prevent the early union of the edges, upon which the success of this mode of treatment essentially depends. He contends too, for the propriety of speedily opening most chronic Abscesses, as delay would only occasion an extension of the disease, and render the entire disappearance of the cavity more difficult and remote.

We are readily disposed to agree with the Author that disease of the spine is neither a necessary, nor a frequent attendant on the Lumbar Abscess, and we have no doubt that this mode of treatment would sometimes succeed ; but whether this would be the case so often, as to counterbalance the risk which arises from opening these Abscesses, and whether Mr. Abernethy's opinion

opinion, that the Lumbar Abscess (a disease hitherto so much dreaded) would be reduced to a disease of little danger or importance, be well founded, must be left to the determination of future experience. We do not think the cases here adduced are sufficient to establish those points.

In the second Essay, Mr. A. treats of the nature, and composition of animal matter. It consists of some experiments on the growth of vegetables and animals in distilled water, tending to shew, that animal matter can be formed, as vegetable, from air and water alone; and that therefore these different substances are formed from a different combination of the same particles, effected by the powers of life in those substances.

These experiments are calculated to confirm an opinion, long ago adopted by Mr. Boyle, and upon which he founded a number of experiments, that the ultimate particles of matter were similar, and that the variety of substances, observable in nature, consisted of different arrangements, and motions, of particles, in themselves the same.

II.

Surgical and Physiological Essays, &c. Part Second,
p. 98. 3s. 6d. By the Same.

THIS, as the former part, consists of two Essays, the first, "On the Nature of the Matter perspired and absorbed from the Skin."

In this the Author endeavours to shew, from several experiments, that the same operations are going on, on the surface of the body, that have been proved to take place in the lungs, during respiration. Dr. Priestly asserted that animal perspiration does not injure the purity of the air, in the manner effected by the process of respiration. Dr. Priestly, however, only slightly pursued this subject; it is therefore no wonder he did not obtain that information, he did not attentively seek.

In his first experiment, Mr. A. filled a glass jar with quicksilver, which was inverted in a trough containing such a quantity of quicksilver as was sufficient to allow the introduction of his hand into the jar. By these means the matter emitted from the surface of the hand was readily collected on the top of the mercury, and became a subject of chemical examination. In sixteen hours, about half an ounce measure of air was collected,

collected. No kind of moisture appeared on the surface of the quicksilver, nor could any be collected by the introduction of absorbent paper. Whatever moisture was emitted, adhered to the surface of the hand, whilst the aeriform, by its levity, ascended to the top. On throwing up lime water to this air, two-thirds of it were rapidly absorbed; a proof of its containing so much carbonic gas, or fixable air. On throwing up to the remainder a bubble of nitrous gas, no red fumes were observed, nor was there any diminution of quantity; proving it to consist of nitrogenous or phlogisticated gas. This experiment was varied by substituting water to the quicksilver, in the jar. The water absorbed the carbonic gas, and the nitrogenous remained at the top of the water.

With a view of ascertaining the changes produced by perspiration, Mr. A. exposed his hand, in succession, to different kinds of air, beginning with atmospheric air. After five hours exposure to this air, lime water was thrown up, when a considerable quantity of the air was rapidly absorbed, and the lime precipitated; the remaining air, being examined by the addition of nitrous gas, had lost nearly one-sixth of the oxygenous gas it contained before the experiment.

The hand was next exposed to nitrogenous gas, and the result, in like manner, proved the emission of carbonic gas.

The

The next experiment proves, that although carbonic gas be thrown forth from the skin, yet, that this gas is capable of being again absorbed, and that in considerable quantity. The hand was exposed, for the space of nine hours, to six ounces of carbonic gas. At the end of this time, the air was reduced in quantity to less than three ounces. The remainder contained a considerable quantity of nitogene, which must have exhaled from the hand.

Some other experiments were made, which induced Mr. A. to believe, that the removal of oxygenous gas, in preference to other kinds of air, is the effect of an active power in the absorbing vessels. The oxygenous and carbonic gasses were very readily imbibed; whilst the nitrous, hydrogenous, and nitrogenous gasses, are with difficulty admitted into those vessels.

The Author next endeavours to ascertain the quantity and quality of the aqueous perspiration. For this purpose he introduced his hand and fore arm into a jar, covered with a bladder, an aperture was made in the bladder, to admit the arm, round which the bladder was tied. In six hours, nearly three drams of limpid tasteless water were procured. This appeared, on evaporation, very slightly saline. No change appeared by suffering it to stand several days; it did not then alter the colour of the vegetable blue. Marine acid dropped into this liquor, produced no coagulation or

pre-

precipitation ; nor was any effect produced on it, by the mixture of caustic alkali. It is therefore probable that the water of perspiration, in a state of health, contains little, except a very small portion of salt.

Mr. A. calculates the quantity of air perspired in one day to be nearly three gallons ; and of water, about two pounds and a half. Much inaccuracy however must be expected on this subject, from the difficulty of measuring the extent of the whole surface, and from absorption going on, at the same time with exhalation.

Mr. A. collected in one hour, of water exhaled from the lungs, about three drams. This was insipid, but not perfectly limpid. On evaporation, a slight crust remained on the surface of the glass, which was not salt, but had a burnt smell. After standing some days it changed the vegetable blue to a faint green, but no odour was perceived. The addition of caustic alkali to this liquor had no visible effect. With marine acid, it became cloudy, and soon a filamentary deposit was made, which resembled mucus when precipitated.

The similarity of the office performed by the skin, and the lungs, which these experiments render sufficiently probable, explains, in the Author's opinion, many circumstances observable in the causes, and cure, of pulmonary consumption. Constriction on the surface, he supposed

poses, by diminishing the exhalation of air and water, will occasion an accumulation of fluids in the lungs, and by this means prove an exciting cause of inflammation. Hence the importance of keeping up an equable warmth on the skin, by the wearing of flannel garments.

Mr. A. closes his experiments by an account of the dissection of an uncommonly constructed heart, in a child of two years of age, who died with symptoms, which indicated a difficulty of transmission of blood through the lungs. In this case the aorta arose from the right ventricle, which was of uncommon size and thickness. The pulmonary artery also arose from the right ventricle, but the communicating orifice was small, and the artery was one-third less than its usual size. The blood was returned from the lungs in the usual manner, by four pulmonary veins, to the left auricle. The left auricle and ventricle were considerably less in size than those of the right side. No artery proceeded from the left ventricle, but there was an opening in the upper part of the septum ventriculorum, by which the blood could be projected into the aorta.

The second of these Essays treats "of the ill Consequences sometimes succeeding to Venæ- section." After stating, that the accounts of authors on this head, are confused and unsatisfactory, the Author places the injuries arising from

from this cause under five different classes, illustrating them by several cases. First, *Inflammation of the Integuments, and subjacent cellular Substance.* This is the most frequent occurrence, and is of little importance. The degree of the inflammation will depend, in great measure, on the constitution of the patient, and requires only rest, and the general remedies of inflammation. Secondly, *Inflammation of the absorbing Vessels.* Of this Mr. A. has seen several instances. One was of a lady who had been bled in the vena mediana basilica; the wound did not heal, nor was sufficient attention paid to keeping the arm quiet. Eight days afterwards the patient was alarmed, by the appearance of two swellings; one, about the size of an egg, situated about the middle of the arm, over the large vessels; the other, rather smaller, on the forearm, about the mid-space between the elbow and wrist, in the integuments above the flexor muscles. They were not very painful, were moderately firm in their texture, and so exactly resembled those tumors, which form around irritated lymphatics, that no doubt could be entertained of their nature. No induration of the venal tube could be distinguished, either at this time, or after the subsidence of the inflammation. The orifice made by the lancet was not healed; the integuments, for about one fourth of an inch surrounding it, were in a slight degree inflamed, and thickened.

About

About five days after the operation, she felt pains shooting from the orifice, in lines, up and down her arm, and upon pressing in the course of this pain, its degree was increased. On an attentive examination of the arm, Mr. A. could plainly feel two indurated absorbents, leading to the superior tumor, but could perceive none extending to the lower one. The wounded part was dressed with mild salve; a bread and milk poultice was applied to the tumors, and the arm supported in a sling. The wound gradually healed, but no evident alteration having taken place in the tumors, after five days, the poultice was changed to one of bread, water, and acetum lythargiritum, cum tinct. opii, under which they quickly diminished and dispersed.

The Author relates two other cases of a similar nature, in one of which, different abscesses were formed in the course of the lymphatics. The common remedies of inflammation were applied with success.

The third injury arising from venæsection, is *inflammation of the vein.* Here Mr. A. gives no observation of his own but refers to the account, which Mr. Hunter has given, (in the Medical and Chirurgical Transactions). Mr. Hunter proposed, as a means of stopping the inflammation in its progress towards the heart in the course of the vein, and to prevent the mixture of collected pus with the circulating fluids,

the application of a compress at some distance from the punctured part, in order to unite the inflamed sides of the vein.

Inflammation of the fascia of the fore-arm is another frequent ill consequence, succeeding to venæflection. When this complaint occurs, it perhaps arises not merely from the contiguity of the fascia, to the punctured, and irritated part, but, it is probable, that it was wounded in the operation. Mr. A. relates the case of a man, forty years of age, admitted into Bartholomew's hospital, under the care of Mr. Pott. He had much pain and difficulty of moving his arm, in consequence of inflammation succeeding to phlebotomy. The wound had not healed; the surrounding integuments were not much inflamed, but he could neither extend his fore-arm, nor fingers, without great pain. The integuments of the fore-arm were affected with a kind of erysipelas; when slightly touched, they were not very painful, but when more forcibly compressed, so as to affect the deep-seated parts, much pain was suffered. A poultice was applied to the arm, opium given at night, and occasionally aperient medicines. After a week, a small and superficial collection of matter took place, a little below the internal condyle, without any relief of the symptoms. About ten days afterwards, a fluctuation of matter was perceived below the external condyle, an incision was made, which penetrated

penetrated the fascia of the fore-arm. Much matter immediately gushed from the wound. This opening was however inadequate to the complete discharge of the matter ; another was made through the detached fascia at the inferior part of the arm, after which the patient recovered, without any particular circumstances occurring.

Inflammation of the fascia is apt to be followed by a permanent contraction of the fore-arm. Mr. A. thinks it reasonable to suppose, that in such cases relief might be obtained, by detaching the fascia, from the tendon of the biceps ; to which it is naturally connected.

The treatment of an inflamed fascia has in it little peculiarity. Quietude of the limb, and a state of relaxation of the inflamed part, will tend to lessen the disease ; but as soon as some abatement of inflammation is procured, the extension of the fore-arm and fingers ought to be attempted, and daily performed ; to obviate that contraction which might otherwise ensue.

The last division of ill consequences from venæction, are those, *succeeding to a wounded nerve.* This is a subject involved in much obscurity. Many of the affections said to arise from this cause, are probably attributable to some one of the causes before mentioned. It is very unlikely that the partial division of a

nerve should produce the alarming symptoms commonly supposed, as it is a circumstance that must frequently happen, in the course of operations. Mr. A. supposes that when such derangement of the nervous system ensues, it is owing to inflammation of the nerve divided, and that the most effectual relief might be obtained from a transverse division of the nerve a little above the injured part, with a view of intercepting the communication of the inflamed nerve with the sensiorium. This however, the reader will perceive, is at present matter of speculation only.

Mr. A. subjoins two figures, pointing out the distribution of the cutaneous nerves; from which it appears that a division of some one of the branches must very frequently occur in venæction.

The mischiefs which occasionally succeed to this operation, will be most readily prevented, by closing the orifice as accurately as possible, and preserving the arm for some time in a state of rest.

III.

Nova acta Academiæ Scientiarum Imperialis Petro-politanæ. Vols. 4, 5, 6 and 7. Pittsburgh,
1793.

IN the physical class of these volumes, we are presented with some Dissertations —

On the Muscular Fibres of the Heart.

By M. C. F. Wolff.

Mr. Wolff gives us a description of the middle stratum of the fibres of the right ventricle. The fibres of the external stratum, he observes, which originate in the base and lower margin of the septum, and are inserted into the upper margin, converging in their course, are crossed by those of the middle stratum arising from the lower margin of the septum, diverge as they proceed, and have their insertion at the base and upper margin.

Of this stratum the fibres are arranged into twenty fasciculi, or muscles, which he has here very minutely described, illustrating them, as well, by plates.

Mr. W. enters into an investigation of the action of the middle stratum of fibres of the right ventricle, before described. Their general effect is to contract the ventricle; but this is
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not their only use, for there are some fasciculi which are formed, as it would appear, that they may be productive of more particular effects: From these fasciculi Mr. Wolff selects three muscles which he denominates *adductores arteriæ pulmonalis*, which serve to draw the arterious orifice and the pulmonary artery towards the ventricle, during which time, the latter expells its blood into the artery: It has a power also of strengthening the pulmonary artery, enabling it to bear the action of the blood, which is propelled with so much force, that were it not for some such resistance, fatal aneurisms might frequently occur. Our Author also describes two other muscles, which he calls, the one, *Contractor interstitii valvularis*; the other, the *aorticus*; He tells us, that they both serve the purpose of contracting the *interstitium valvulare*, and to express the blood which gets to it after the ventricle is filled: the same muscles are also useful in closing the venous orifice of the ventricle during its systole, and in not admitting the blood to again return into the right sinus. He next describes another very powerful muscle which he calls *posterior pulmonalis*; it contracts the arterious cone or that part of the ventricle from which the blood is immediately propelled into the pulmonary artery. It would be in vain to attempt a minute description of the situation and direction of

of those muscles without the plates which accompany the work.

Mr. Wolff still pursues his investigation of this viscus, and has in his tenth dissertation, part the first, given us a description of the second stratum of the fibres of the left ventricle.

Description of an Aorta extended to an unusual size, ruptured and ossified in several places — By the same.

THIS is a case of a man forty years of age, apparently in a good state of health, who died suddenly without any previous indisposition. On dissection, the pericardium appeared like a large bladder, which completely occupied the whole anterior part of the thorax, driving the lungs to the posterior. On puncturing it there issued out between three and four pounds of fluid blood, but there still remained a pound and half, coagulated. On removing this there was discovered a rupture of the aorta, about two inches in length, in a longitudinal direction. It had the appearance of a wound inflicted by a knife, on the posterior surface, close to the arterious orifice of the left ventricle. The whole of the aorta appeared diseased, had lost its elasticity, and its length as well as diameter was enormous. That part of it which was enclosed in

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the pericardium was seven inches and four lines in circumference; and it was twelve inches and half long from it's origin to the end of the curve, where it proceeds in a straight line along the vertebræ of the back.

On making a section of the artery, a number of small pieces of bony matter were discovered between it's two coats. Mr. W. counted thirty eight distinct pieces; one of them was an inch long, and many were half an inch in diameter. Their shapes were various, but all had very sharp edges, and Mr. Wolff ascribes to their action, both the dilated state of the aorta, and the fatal rupture.

Observations on what is commonly called the Cellular Membrane. — By the same.

IN this dissertation we are informed that neither by the microscope nor by the eye alone, could Mr. Wolff on a careful examination discover any cells, lamellæ, openings, or cellular texture, in what is usually called cellular membrane; but instead of all these it appears to be a continuous, uniform, transparent substance, almost fluid, but of such tenacity, as to be easily drawn into filaments. Of this sort was the substance under the skin, or membrana adiposa, and that which invests the muscles, blood vessels, and nerves.

In

In order to examine this substance we must separate it from the parts it connects together; in doing this, the glutinous matter breaks into threads, which has given rise to the texture which anatomists mention, from their conceiving it to be its natural structure. He examined two contiguous muscles covered by this substance. They appeared as if bare, but on pulling them a little asunder, we found a smooth substance also, without either filaments, lamellæ, cells, or pores. But on using more force, the filaments began to form, at first adhering to the parts they covered, but which at length separated and became complete threads. On bringing the muscles together again, the filaments united and formed a smooth surface as before.

As this substance is almost fluid, and of considerable tenacity, it often happens that the external air penetrates into it and forms bubbles or vesicles. They have alledged this as another proof of it's cellular texture, but this *M. W.* absolutely denies, because they are of various sizes, and when laid under the microscope they appear to be only air-bubbles without any communication, as we might expect organized cells to have. Mr. Wolff says, that what have been taken for lamellæ, are nothing else but the dried air vesicles. The cellular substance is said to be white, but he affirms that it is quite transparent, and without colour in it's natural state, though like

other transparent substances, it appears white when its continuity is interrupted.

M. Wolff enters next into a particular description of the parts adjacent, to what is commonly called cellular membrane.

The cutis, he observes, which is five times as thick as the cuticle, is smooth and uniform, without cells, laminæ, or filaments; is too dense to be drawn out into threads, and is elastic. The subcutaneous substance is twice as thick; it is also much softer, and when extended, separates into filaments, resembling the cellular membrane of other parts. It is divided into two strata, the exterior of which, more resembles the cutis, than the interior does the glutinous matter; but neither of these strata has cells, laminæ, or filaments.

It is commonly supposed, that the cutis, the subcutaneous substance, and the glutinous matter, are all equally of a cellular texture, with only this difference, that the cutis has greater density, than the others; and that the transition from the one, to the other, is so insensible, that it is impossible to point out exactly, where one terminates, and where the other begins. This, M. Wolff maintains, is an erroneous opinion; the cutis is perfectly distinct from the subcutaneous substance; with the same facility, with which the epidermis may be separated from the cutis, the

cutis

cutis may be separated from the subcutaneous substance, and the upper stratum of the latter from the lower.

Immediately beneath the subcutaneous substance, is the fat, which separates it from the glutinous matter. The fat is composed of moleculæ, which, when examined by the microscope, appear to consist of innumerable yellow vesicles, formed of a very thin, transparent, pellicle, and filled with an oleaginous fluid; the author broke some of these vesicles, whilst they were under the microscope, with the point of a fine needle, and could then easily distinguish the ruptured pellicles, by the drop of fluid that issued from them. These pellicles are formed of the common glutinous substance, which is exceedingly soft, and ductile; and this substance may be seen pure, and without fat, between the moleculæ. The vesicles, the author supposes, are formed in the same manner as the air bubbles before mentioned; the oleaginous substance transpires through the coats of the arteries in little drops, which, insinuating themselves into the surrounding gluten, extend it into vesicles.

There are also granules, or globules, formed in the subcutaneous substance, and even in the cutis; in the latter they are white, and not very distinct, but in the interior stratum of the former, they are more apparent and of a yellowish colour. These, the author thinks, are vesicles

like those which contain the fat, but filled with a mucilaginous fluid: so that the cutis gradually, though not insensibly, degenerates, not into gluten, but into fat.

The vesicles of fat are different in different animals. The fat of a hen is contained in smaller vesicles, than M. Wolff had observed in any other animal; in that of a goose, they were much larger, and formed more regular moleculæ. The vesicles in human fat were still larger, but were surpassed in size by those of an ox; the largest that were observed were in the fat of a hog.

Beneath the fat is a stratum of glutinous substance, which seems to be a kind of medium between the fat, and the common gluten that is between the muscles; it contains a series of vesicles, thinly dispersed, and separated by considerable interstices; these interstices are filled up with pure glutinous substance, which, like the common gluten, is void of all organization. This stratum, M. Wolff calls the *Tunica adiposa*; and in it are the subcutaneous blood vessels and nerves.

IV.

Observations on Human and on Comparative Parturition. By R. Bland, M. D. A. S. S. 8vo.
p. 223. 4. 6. Johnson.

VARIOUS have been the opinions amongst men, of the necessity of establishing midwifery as a particular science. Some have looked on it as of so little importance, that they have treated the subject altogether with contempt; arguing from the analogy of other animals and the sufficiency in general of nature to the completion of her operations; whilst on the other hand, many have considered the art of midwifery as of the highest necessity to mankind. Truth here, as in most other cases, is probably to be found between those extremes. In uncivilized life, delivery is in general accomplished with little difficulty, and little want of the midwife's aid. The refinements however of polished society, induce such material *physical* alterations on the human frame, and such considerable deviation from the natural state, that the analogy of brutes, and even of the human species in uncivilized life, is exceedingly limited in its application. With whatever ease parturition may be accomplished in the wilds of America; in some warm countries of Europe; and with particular

particular individuals amongst ourselves; still we cannot but coincide in opinion with Dr. Osborn, (whose "Essays on Midwifery" form the principal subject of Dr. Bland's observations), that "Labour is necessarily and inevitably a "painful, tedious, difficult, and sometimes dangerous operation." This is certainly, generally speaking, the case, with women in this country, compared with other animals. As it is impossible in many cases, *à priori*, to say, when the obstacles to delivery are so great, as to require the interposition of art; and as much of the difficulty can frequently be prevented by early precautions, it is undoubtedly better on the whole, that the practice should devolve into the hands of those, who have studied it as a particular art. A frequent attendance on natural and easy labours can alone qualify a man, for giving adequate assistance in cases of difficulty, since it is by comparison only that he can be enabled to form an accurate judgment of the impediments to delivery that occasionally occur.

Dr. Osborn has endeavoured to demonstrate "the inevitable and physical necessity of the "tediousness, the difficulty and the dangers of "human parturition, as dependent on the peculiar "form and position of our Body." (*Essays on the practice of Midwifery.*)

This proposition Dr. Bland combats in the work before us. He maintains that human parturition

turition is by no means, naturally, so tedious, difficult, or dangerous, as Dr. O. suggests. The author supports his opinion on the numerous facts, which must have occurred to every practitioner, of labours extremely quick and easy; on what is related by Diodoras Siculus, that in Corsica, no attention was paid to the lying-in women: but, as soon as they were delivered, the husbands were put to bed, and nursed in their place; and on what Strabo says of a similar custom prevailing in Spain, in his time. Several Historians have mentioned the extreme ease with which parturition is effected in various parts of the world.* The difficulties which occasionally occur, Dr. B. thinks, may be attributed to particular circumstances in education, manners, and customs. He shews likewise that difficult parturition is by no means confined to the human species, but is frequently found to take place in tame and domestic animals, who may be supposed to have undergone considerable change from their natural states. Dr. B. recites a conversation that he held, on this subject, with a person long conversant with the nurture and management of cows, near this metropolis; which shews, that those cows that are kept in London upon gross and improper food, with little exercise, have more frequently difficult Labours, and suffer more in consequence of parturition, than those that live in the country, in a manner more adapted to their nature.

" Many

* (Bruce, Pittavellius, Enib, l'abbe Prevost, Hennepius, Brydone &c.)

" Many cows," we were told, " parted with their
 " young in the space of a quarter of an hour,
 " but their labour was more frequently of the
 " duration of two hours ; in tedious and difficult
 " cases, which in London, where the animals
 " are overfed, and made too fat, occur as often
 " as once in six or eight labours, it is protracted
 " from eight or ten hours, to two days or more.
 " That these difficult cases happened, not only
 " when the calf came in a wrong position, but
 " even when the presentation was natural : That
 " the difficulty was sometimes so great, as to re-
 " quire considerable dexterity, and the strength
 " of six or eight men to surmount it. Some per-
 " sons," our informant acquainted us, " fix a
 " rope to the presenting part of the calf, and
 " make use of a horse to draw it away ; but as
 " horses do not draw steadily, but by jerks, the
 " cow was liable to be injured ; he therefore dis-
 " approved of this practice. Cows sometimes
 " lose a prodigious quantity of blood on parting
 " with the calf ; and although he never knew an
 " instance of any one flooding to death, yet their
 " health and strength were sometimes so reduced
 " from this cause, and from the difficulty of the
 " birth, that their recovering was very tedious,
 " and sometimes they were never perfectly re-
 " stored to health. They sometimes experience
 " convulsions during parturition, but more fre-
 " quently immediately after, which carries them

" off

" off suddenly. In some cases, the perinæum
 " is lacerated so completely as to lay the vagina
 " and rectum into one passage; and this happens
 " in natural births, when the calf proves too
 " large for the passage. In straining to bring
 " away the bag, (the membranes) a prolapsus,
 " or descent of the womb, sometimes takes place,
 " which is then found hanging out of the body of
 " the cow, of the size of a gallon pot. In this
 " case they put the uterus back, and retain it in
 " its situation by making two or three strong
 " stitches at the entrance of the vagina. When
 " the placenta is retained more than twenty four
 " hours after the birth of the calf, it never comes
 " away" he said, " entire, but putrefies and gra-
 " dually dissolves. In these cases it is seldom
 " entirely discharged in less than a month: the
 " animal, during that time, has bad health, and
 " is generally reduced almost to a skeleton.
 " Cows are peevish and fretful as the period for
 " calving approaches, refusing to be milked, or
 " even not suffering any one to come near them.
 " That they frequently suffer very severely dur-
 " ing labour is evident," he said, " from their
 " countenance, which is sometimes suffused with
 " tears, and from their groans, which may some-
 " times be heard at a great distance. In gene-
 " ral, cows that are fat have more difficult
 " labours, and are more liable to disease after
 " parturition, than those that are lean. If there

" is a great disproportion between the cow and
" the bull, the latter being much the largest, the
" labour may be expected to be difficult."

Dr. Osborn directs that, at the time the head of the child is about to pass the os externum pressure should be applied to the perinæum with the palm of the left hand, whilst, with the right, the operator should strenuously, in every pain, resist its progress, hereby obliging the distension of the soft parts to be as gradual, and the passage of the child's head through them, as deliberate, as possible; by these means, guarding against laceration of the perinæum. Dr. B. considers the former part of the direction as useless, and the latter as capable of doing much mischief. Indeed it is not easy to conceive, how pressure on the perinæum can tend to its preservation, any otherwise, than as it, in some degree, retards the labour; and how far this is commonly safe, or proper, may admit of much question.

Dr. B. we think with great propriety reprobates the custom of confining women after delivery to close and hot rooms, of obliging them to continue in their beds for the first nine days at the least, and of administering hot, stimulating drinks and cordials, which proves extremely injurious to their health, and frequently reduces them to a state of imbecility, from which they with difficulty recover. Dr. B. concludes his observations on natural labour, with remarking,

in which we most heartily join, that we should avoid all unnecessary interference, neither interrupting and retarding, nor accelerating labour; but leave every thing, in all ordinary cases, entirely to the guidance of nature.

On the subject of laborious parturition, the author inquires, what are the symptoms or circumstances, which make the use of instruments, in midwifery, safe and advisable? What those, which render them dangerous, and to be absolutely prohibited. These, he says, are to be sought for, solely in the state of the os uteri; while that continues firm, rigid, and unyielding, we cannot, without hazard of doing the greatest mischief, attempt to use them, even although the labour should endure four, five, or a greater number of days. When that is soft, yielding and dilatable, we may then safely have recourse to them, whenever we apprehend the vagina and neighbouring parts of the woman, are so pressed by the head of the child as to be in danger of inflammation. How long we may wait before such danger is to be apprehended, will vary according to the constitution of the patient; but may, by a person versed in practice, be pretty accurately known. In general, mischief may be expected to happen sooner in the first, than in subsequent labours. Whenever the head of the child is so low, and the pressure so great, as to deny egress to the urine, we may be assured that danger is at hand. On

the other hand, Dr. B. is decidedly of opinion, from long experience and practice, that no danger whatever can happen, from the use of the lever or forceps, when the os uteri is fully dilated. When that part is entirely distended, the vagina and uterus form one continued canal, with scarce a ruga, or the lightest eminence, to distinguish where it was placed; consequently, is in no danger of being injured, except by pressure. In this case therefore, we are not to wait, until the powers of nature are exhausted; until so much injury is already done, that it is beyond the power of art to remedy it; but by a prudent, and cautious use of the lever, or forceps, slowly and gradually to extract the child; remembering always, that as it is perfectly safe, so it is most prudent, rather to begin this necessary and salutary operation a few hours sooner, than one minute later than the period when danger commences.

On the subject of convulsions occurring, during labour, Dr. O. had said, "the propriety or necessity of immediate delivery, whether instrumental or manual, is now so universally acknowledged to be founded on the firmest principles of science, as to be admitted an invariable rule in practice, because affording the only probable chance in such cases, of preserving the patients life." This doctrine our author strenuously contends against, and adduces the opinions

opinions of *Mauriceau*, *La Motte*, *Smellie*, *Leake*, *Denman*, and *Hamilton* in opposition to it.

Mauriceau says, "he was called to a woman " who had been two days in labour, when she " was suddenly seized with convulsions. As the " membranes were not broken, and the os uteri, " which was soft and thin, was only dilated to " the breadth of two fingers, he directed a dose " of infusion of senna, sharpened with orange " juice, to strengthen the pains; this being re- " jected by vomiting, a second dose was given, " which answered so well, that in five or six hours " the woman was happily delivered."

La Motte says " we must not, in all cases of " puerperal convulsions immediately attempt to " deliver the woman, but must endeavour by " proper medicines, to break the violence and " diminish the danger of them, which he had of- " ten effected. Our efforts to this purpose, not " proving successful, and the life of the woman " and child being in danger, we are then to have " recourse to delivery as a last remedy."

Dr. *Leake* — " In strong convulsions during " pregnancy, a speedy delivery has been propo- " sed, and recurred to, as a principal remedy; " but observation and experience shew, that this " rule will admit of many exceptions, and ought " to be regarded with great caution."

Dr. *Hamilton*, in speaking of puerperal con- " vulsions, gives the following directions. " Epi- " leptic

" leptic fits, when so violent and frequently re-
 " peated as to leave the patient in a state of stu-
 " por or insensibility, retard labour, and endan-
 " ger the lives of both parent and child. If the
 " foetus should not be expelled by a few pa-
 " roxyms; if symptoms are threatening, and
 " the child is within reach of the forceps, deli-
 " very should be effected as soon as possible. But
 " any violent exertions to procure delivery, by
 " forcibly stretching the parts and counteracting
 " nature, with a view to turn the child, as many
 " advise, is impracticable with any probability of
 " success. In every instance, it ought to be a
 " rule, to wait, until the head of the child is
 " sufficiently protruded, that the access may be
 " easy to apply the forceps."

Dr. Denman says " the most eminent men of
 " the present time, have been induced to prefer
 " waiting the event of the natural pains, or even
 " of the convulsions themselves, which generally
 " act as pains. They have observed, that the
 " violent method proposed, very often failed of
 " success, and that women labouring under this
 " dreadful complaint, were not only delivered
 " without extraordinary assistance, but were more
 " likely to recover afterwards, when the birth
 " was left to nature. Besides it was not over-
 " looked, that convulsions often came on, when
 " things were so circumstanced, that it was im-
 " possible to pursue the measure laid down, with-
 " out bringing on, certainly, as great mischief

" as

"as we endeavoured to avoid. This disease, "though not frequent, occurs too often, not to "make the establishment of this improvement "desirable."

When speaking of floodings, the Author advises to follow the practice of Puzos* who was the first, that directed rupturing the membranes and evacuating the waters, to give the uterus an opportunity to contract and approach nearer the body of the child; by this means the orifices, through which the blood continued to be poured out, will be diminished, and in a great measure closed, and the flooding abated or stopped. The dilating the os internum gently, from time to time, with the fingers, would tend to bring on the necessary contraction, and thus hasten the delivery.

In cases where the placenta is attached over the os uteri, delivery is perhaps, the only means of preserving the life of the woman and child, that can be depended upon; and that should be performed, as soon as the os uteri is sufficiently soft and pliable to admit the hand to be introduced into the uterus, to turn the child without great violence.

Dr. Bland next enters into a comparison of the utility of the forceps and lever or vectis, when he decidedly gives the preference to the latter instrument, as more simple in its structure and application, and adapted to many cases where

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* *Pratique des Accouchemens.*

the forceps cannot be used, as when the head is but just entering the pelvis, and when there is not room for the admission of both blades of the forceps. In this respect he differs entirely from Dr. Osborn, who discards the use of the lever altogether. We believe however that the general practice is now in favour of the lever or single blade. Our author thinks it should have a very slight curvature.

The reader will find many valuable remarks in the work before us, but we cannot help expressing our regret, that a difference in opinion should give rise to any petulance of criticism. The cause of truth can receive no support from such means.

V.

Pharmacopæia Chirurgica; or Formulae for the use of Surgeons; including, among a variety of remedies adopted in the private practice of the most eminent of the profession, all the different Formulae of the different hospitals. London, 1794. 12mo. p. 130, 2s. 6d. sewed, Robinsons.

WE cannot give a better idea of this little work than by transcribing the advertisement prefixed to it. “ It is a fact of which every “ medical man must be aware, that, in the Phar-
“ maco-

" macopœias already extant, a very inconsiderable number of formulæ are included for the particular use of surgeons, and many of these happen to be such as individuals do not altogether approve. It may indeed be very reasonably disputed, whether the learned bodies who have for a series of years, sent forth their instructions on this subject, be actually competent to the task of directing what remedies are adapted to the practice of a branch of the healing art with which they profess to have no acquaintance whatever; and they would perhaps have done well, had they acknowledged this incompetency, by leaving entirely out of their new editions, the few topical remedies that are at present included in them. The design of the following pages, is to supply the deficiencies alluded to, and to furnish the surgical practitioner, with a complete collection of those formulæ, which, in the course of his professional engagements, he must necessarily stand in need of."

" Since the publication of the *Theory of Surgical Pharmacy*, a work, at this time, in a great measure, obsolete, and disgraced also with receipts for cosmetics and other ridiculous compositions, nothing of this kind has been attempted. The *practice of the different Hospitals*, has indeed been the subject of a somewhat later publication, but its known inaccuracy,

" the unscientific way in which it is put together,
 " and the very few chirurgical remedies included
 " in it, afford the practitioner a very scanty share
 " of information. In the present work, parti-
 " cular care has been taken to admit only such
 " formulæ as are applicable to surgery, and, of
 " those, none but really useful and efficacious
 " remedies. Where this rule is disregarded at
 " least, it is only on the authority of some emi-
 " nent practitioner, whose partiality to a parti-
 " cular remedy, has been grounded on a long
 " experience of its good effects, and whose name
 " furnishes a sort of sanction for its introduction."

" In the nomenclature, as strict an attention is
 " paid as the case would admit, to the plan very
 " properly pursued by the London College, but,
 " in some few cases, as the reader will readily
 " perceive, it has been found impracticable."

" Since the practice of surgery unavoidably
 " embraces many of the remedies of the physi-
 " cian, it has also been found necessary to pay
 " a degree of attention to them; but this is done
 " to no farther extent, than the customs of me-
 " dical surgery may be supposed to warrant. To
 " all the formulæ directly taken from the college,
 " a distinguishing mark has been affixed. The
 " more operose of these, as the chemical prepa-
 " rations, &c. are merely named, and their uses,
 " in a concise way, pointed out. The more
 " pharmaceutical compositions, as the collyria,
 " liniments,

" Liniments, unguents, &c. are detailed, and their mode of application spoken of. Lastly, it may be proper to observe, that Cheselden's *Short Essay towards a Pharmacopoeia Chirurgica*, annexed to *Le Dran's Operations*, furnished the general hint for the present publication, which, it is hoped, will be found of some utility to the surgical practitioner."

A work of this kind was certainly much wanted among surgeons, and we conceive the present, will be found to answer the purpose exceedingly well.

VI.

Historia Litteraria & Critica Forcipum & Vectium Obstetriciorum, auctore Johanne Mulder, A.L.M. Phil. & Med. Doct. &c. Lugduni Batavorum 1794. 8vo. p. 209.

THIS work is divided into two sections — In the first the author traces with great industry, the forceps and vectis or lever, through the various changes they have undergone, from the time of Avicenna in the tenth century, to the present period. He gives an accurate description of each instrument, with the directions for its use as taken from its inventor. This part is illustrated by several plates, wherein are delineated all the different forms those instruments have, from time to time, undergone.

In the second section, the author inquires into the construction and use of the various parts of the instruments now in use; the method of applying them; the advantages to be derived from them; and the injuries that may arise from their improper application.

It is impossible to abridge a work of this kind. The author is entitled to every praise for the laborious investigation he has bestowed on the subject, and we have no reason to doubt the accuracy with which it has been conducted.

VII.

Transactions of the College of Physicians of Philadelphia.—Vol. I. part 1. Philadelphia, 1793, 8vo. p. 254. 4s. boards.

THE college of physicians of Philadelphia was instituted about the year 1787, and in the year 1789, were by an act of the legislature of that state, erected into a corporate body, with the necessary powers and privileges. The present work is their first publication, which is intended to be continued, as materials can be collected. They do not mean as a body, to vouch for the accuracy and fidelity of the facts, recorded in their transactions; those must rest on the credit of their respective authors.

Prefixed

Prefixed to the work, is a discourse delivered before the college, on the object of their institution, by Dr. Benjamin Rush. It points out, with perspicuity and elegance, the objects of inquiry which naturally suggest themselves, as proper to be pursued; the advantages which may be derived from the institution; and suggests the many resources, that country offers for the improvement of medicine. It is a general opinion, that the condition of man is in a progressive state of amelioration. The conveniences and pleasures of life, are daily multiplying, by the inventions of philosophy. Many disorders, once deemed incurable, now yield to medicine. There can be no doubt that America will contribute her share, to the improvement of science, whilst she produces such men as Dr. Rush.

The work consists chiefly of cases, which we shall set down in their order, noticing particularly, such as appear most useful.

It commences with *Tables of diseases in Philadelphia, from Dec. 1786, to Dec. 1792*, collected from the public dispensary of that city, serving to shew the frequency with which particular diseases take place.

1. *Case of a Curvature of the Spine*, by Thomas Dolbeare, in a letter to Dr. Rush. Read, 1787.

THIS patient, thirty six years of age, had the usual paralytic symptoms, and applied to the late

Mr. Pott,

Mr. Pott, who advised the caustic. The curvature was gone in about four months after the application, and the symptoms gradually removed.

2. Case of Hydrocephalus internus, successfully treated by mercury. By Dr. Michael Leib. Read, 1788.

THE patient was a child, three years of age. The quantity of calomel he took, from the 12th of Sep. to the 28th, was one hundred and twelve grains. A violent fall on the head, some days previous, was supposed to have given rise to the disease.

3. An Account of Tetanus from the extraction of two Teeth, successfully treated by the use of Wine and Mercury—In a letter from Benjamin Rush, M. D. to Dr. Redman. Read 1788.

ONE of the teeth had been broken in drawing, and the roots remained in the jaw. A few days afterwards, after exposure to cold, a *trismus* came on, accompanied with a swelling on each side of the throat, a full pulse, and a total inability to speak. Bleeding and emetic tartar were at first had recourse to. Within a few minutes after bleeding, the patient was seized with convulsions of the opisthotonus kind, with a pain at the bottom of the sternum. Five quarts of wine were given in the course of twenty-four hours, with about an ounce of bark, which was all that could be got down. The outside of the throat and jaws were rubbed with mercurial ointment. In three days the

the complaint was removed. Dr. Rush mentions costiveness as a constant symptom in tetanus.

4. *An account of the Tænia, discovered in the liver of a number of Rats.* — In a letter from Dr. Joseph Capelle, of Wilmington, to Dr. Rush. Read, 1788.

In sixteen, of eighteen rats, that Dr. C. dissected, he found several worms resembling the tænia, some above a foot in length.

5. *Cafe of Tetanus,* by William Clarkson, M. B. Read, 1788.

THE patient was a young man, about twenty years of age, who trod upon a rusty nail. The disease subsisted from April 4th, to the 19th, when it proved fatal. The tonic and stimulant plan of treatment was adopted, and seemed at first to produce good effects. In the course of the disease he took twelve quarts of good wine, near three ounces of the thebaic tincture, about four ounces of bark, half an ounce of Haarlem oil, and two drachms of the volatile alkali — near two ounces of mercurial ointment were rubbed into the neck and jaws.

Although the mercurial frictions salivated the nurse for near a week, there was but little appearance of ptyalism in the patient.

5. *Account of the successful application of cold water to the lumbar region, in calculous cases.* In a letter to Dr. Rush. Read 1788.

THE subject of this observation, in his letter to Dr. Rush, says. " Having been a great sufferer, for twenty-five years, I was led to read every author I could meet with, who wrote on the stone and gravel; by which means I learned that most of those that are afflicted in that way, are of a relaxed habit of body; on which I thought, if I used a partial cold bath, it might be of service to me. Accordingly after I had passed some stones, I had reason to hope there were no more large ones left in the kidneys— I began the application. I placed a basin of cold water on a night-chair, and on getting out of bed every morning, stripped myself naked and placing myself over it, I applied a large wet sponge to the small of my back, two or three times, and I sometimes applied it to the fundament and genitals; the consequence of which has been, that the vessels of my kidneys have been contracted and strengthened, so that they have expelled the sand and gravel as fast as it is formed, so that though I pass as much sand and gravel as before, I have never had a bad fit since I began with the above method which is nearly two years." The remedy has been tried by another person, with equal success.

7. *Case of Hydrocephalus internus, with the appearance on Dissection.* By Dr. Michael Leib. Read 1788.

THIS case was of a child, of two years, who had a fall down stairs, which was attended with a small contusion of the forehead. Mercurials were used. On dissection, all the ventricles were distended with a clear watery fluid; each of the lateral ventricles contained at least one ounce and half, and the other two about an ounce.

8. *Account of the state of the Barometer for the year 1789.*

9. *An account of a singular case of Ischuria, in a young woman, which continued for more than three years; during which time, if her urine was not drawn off by the Catheter, she frequently voided it by vomiting; and for the last twenty months, passed much gravel by the Catheter, as well as by vomiting, when the use of that instrument was omitted, or unsuccessfully applied To which are annexed some remarks and physiological observations.*
By Isaac Senter. M. D. Read 1790.

THIS is a most wonderful case, for the urine passed off not only by vomiting, but, at times, by the rectum and by the umbilicus. Dr. Senter took much pains to guard against deception, and we have no reason to doubt the accuracy of his observation. On dissection, very little alteration was found in any of the viscera. The urinary bladder was in its natural state, not the least thickened, and had no sand nor gravel in it.

The stomach appeared very much changed from its natural colour, and in a gangrenous state, containing a semi-purulent matter, of a foetid scent. In the intestines there were no ruptures, either of their muscular coats, blood-vessels, or lymphatics, that could be discovered.

10. *Two cases of the Retroversion Uteri.* By the same. Read 1790.

IN these the reduction was effected, by the introduction of the hand into the vagina, placing the woman on her knees and elbows, having previously drawn off the urine by the Catheter.

11. *An account of a supposed case of internal Dropſy of the Brain, ſuccessfully treated by Mercury.* By Dr. Rush. Read 1790.

12. *A ſhort account of the Influenza which prevailed in America in the year 1789.* By William Currie, M. D. Read, 1790.

13. *Account of the ſtate of the Barometer in the year 1790.*

14. *Case of inverted Uterus.* By Benjamin Duffield, M. D. Read, 1791.

THIS was occasioned by the midwife pulling forcibly the navel string, to bring away the placenta. The uterus was ſoon reduced, and the woman recovered.

15. *An extraordinary case of the rupture of the ligament of the os Humeri, with the cure thereof.* By Dr. Benjamin Say. Read, 1791.

THIS

THIS case appears to be merely a separation of the clavicie from the acromion, by violence. By keeping the parts in their situation by means of the sling recommended in Bell's system of surgery, vol. 6th. union took place and a cure was effected.

16. *Account of a Head-ach, cured by the discharge of a worm from the nose.* By Thomas H. Stockett. Read, 1791.

17. *An account of a new Bitter prepared from the Bark of the root of the Liriodendron Tulipifera.* By Dr. Rush. Read, 1791.

Dr. Rush imagines this to possess all the properties of a simple bitter.

18. *An account of a singular case of the Small Pox, successfully treated, by the plentiful use of Bark, fermented liquors, and animal food.* By Dr. Rush. 1791.

19. *An account of the effects of electricity, in the removal of an obstruction in the biliary duct,* communicated by Dr. Jacob Hall, principal of Cokesbury College in Maryland, to Dr. Rush. Read 1791.

Dr. Hall was himself the subject of this case. He had used the ordinary remedies without effect. Opium gave only temporary relief. *Three strong shocks,* passed through the left arm and breast, and out at the right side, through the part affected,

suddenly and entirely removed the pain! and in the evening a diarrhoea came on, which, by its appearance, demonstrated that the obstruction was removed.

20. Medical facts and observations, extracted from a letter from Moses Bartram, M. D. to Dr. Rush. 1791.

21. An account of the sudden effects of the affusion of cold water upon the body, in a case of Tetanus. By Dr. Benjamin H. Tallman. Read, 1791.

THE patient was a young woman, and the tetanic complaint was combined with hysteria. The affusion of the cold water brought on syncope, which together with the spasms, went off in half an hour.

22. Case of Anthrax. By John Jones, M. D. Read, 1791.

23. State of the Thermometer for the year 1791.

24. Case of Dysenteria Chronica, cured by Allum. By Dr. Michael Leib. Read, 1792.

THE dose of allum given was from four to eight grains four times a day.

25. An account of one of the causes of the Trismus Nascentium. By the late Moses Bartram, M. D. Read, 1792.

DR. Bartram supposes, that this disease often arises in the negro children from the want of attention to the falling of the navel string, and consequent

consequent irritation from the neglect of the remaining sore.

26. Practical Observations on Phthisis pulmonalis;
By Isaac Senter, M. D. Read, 1792.

AFTER lamenting the inefficacy of the common methods of treatment in this very fatal disease, Dr. Senter points out the method of cure which has succeeded best in his own practice. This is, vomiting every second or third day with the vitriolum cupri, giving in the intervals, as much as the stomach will bear, of the antiseptic mixture of Dr. Griffiths, composed of myrrh, sal martis, and sal tartari; Dr. Senter commonly gives five pills, containing from seven to ten grains of each of these ingredients, in the morning fasting, and directs that nothing be drank to urge the emetic effect. If five or six plentiful evacuations are produced by this dose, he generally continues the same quantities, but if not, he increases the dose to six or more pills of the same kind. By these medicines, Dr. S. assures us, he has restored to health more persons labouring under hectic fever from glandular suppurations, than by all the other medicines and methods he has ever read of, or tried. He looks on the blue vitriol as one of the most safe and efficacious emetics, joined with ipecacuanha, that the *materia medica* furnishes us with.

Dr. Senter

Dr. Senter mentions the case of a man, whom he had cured of a tuberculous consumption, whose cough was very severe, and who daily discharged large quantities of bloody purulent matter, accompanied with foetor. He was much emaciated, had night sweats, and every evidence of a compleatly formed hectic. In the course of about three weeks, he took twenty-four dry emetics, and perhaps half a dozen mixtures of Griffiths medicine, and confined himself to a milk diet.

The author says, he could enumerate a very considerable number of similar cases, of what is called a scrophulous phthisis, that he has cured, without giving any other medicine of consequence besides the two above mentioned.

27. *Case of Hydrophobia; by Dr. George Bennell, of German Town. Read, 1790.*

This is one of the best related cases we have ever read. It proves in the clearest manner, the existence of this affection, as arising from the bite of a rabid animal, which some have of late affected to doubt: Were there no other evidence of the disease, than the case before us, we do not hesitate to say, that we should feel perfectly convinced of the real existence of such an affection. This case unhappily serves to prove, at the same time, the inefficacy of medicine to its relief. Mercury, with the warm bath, was liberally administered.

28. *Remarks*

28. *Remarks on the effect of Corrosive Sublimate, in Cancerous affections—In a letter from Dr. Senter, to Dr. Currie; with additional remarks by the latter.* Read, 1792.

THE experience of both these gentlemen contradict the testimony of Dr. Moseley, in his treatise on tropical diseases, in favour of the use of sublimate, in cancerous affections.

29. *Case of Hydrocephalus Internus, attended with equivocal Symptoms, with the appearances on Dissection.* By Dr. Currie, Read, 1793.

ON removing the cranium, Dr. Currie found that the dura mater was not attached to it any were, but at the sutures; which is contrary to the assertion of both Haller and Pott; and, we may add, contrary to the observation of most anatomists of the present day.

VIII.

A Treatise on the Croup. By D. Alexander.
8vo. 2s. Johnson.

WHETHER it be, that the croup is really a new disease, as some have supposed; or whether, which is more probable, it may have become more formidable in its symptoms, and fatal in its termination, than heretofore; certain it is, that the first distinct account of it we have

have, is that published a few years ago by Dr. Home, of Edinburgh. Since which, we have had several treatises on the subject. Mr. Alexander gives us several well drawn cases of the disease, which tend to confirm the idea of it entertained by Dr. Cullen, and now we believe, pretty generally admitted; that it is an inflammatory affection of the lining membrane of the superior part of the trachea. The treatment pursued by Mr. Alexander, which in his practice was so successful, as almost entirely to take away the danger of the disease, was consonant to this opinion of the nature of it. The application of leeches and blisters to the throat, together with general antiphlogistic remedies, he found almost invariably successful. Vomiting too, Mr. A. recommends: but, in our opinion, much caution is requisite in the use of emetics. The immediate effect of the action of vomiting is to put all the parts about the throat violently upon the stretch, which, by increasing the irritation, is likely to add to the danger of the disease, by exciting the inflammation to a still higher degree. No one thinks of advising vomiting in an inflammation of the pharynx, and the reason is perfectly applicable to the disease in question. We do not, however, give this opinion from speculation only; we have seen a case of croup, where emetics were frequently administered, and every repetition of them was manifestly followed by an aggravation

aggravation of the symptoms. In further support of the idea we entertain, we may mention, that we have witnessed the exciting of sneezing artificially, with a view of detaching, and throwing forth from the trachea, the supposed newly-formed membrane. By this, the symptoms of suffocation were exceedingly exasperated, and we have no doubt, the approach of death hastened. Could we indeed be certain, that such membrane was so nearly detached from the surface of the trachea, as to be easily expelled by the full exspiration which accompanies the act of vomiting, it might be considered a sufficient reason for its use ; but as this cannot, *a priori*, be known, and as it would in all probability, of itself, excite a cough, sufficient for its expulsion, we think the objections to the use of emetics are very strong and material. That numerous recoveries have taken place where emetics have been employed, is well ascertained, but we know likewise, that patients have recovered, when the disease has been treated as spasmodic, by inhaling the smoke of burning resins, and by the use of volatile alkali, and other stimulants. The reason seems to be, that the croup is by no means, at all times, and in all patients, equally dangerous. In some, its progress is slow, and the symptoms mild; in others, it proceeds with rapid strides, baffling the resources of art, to a fatal termination. — We have been the more full in our observations, because we conceive this to be a point of great importance to be attended to.

IX.

The Life of John Hunter. By Jesse Foot. Surgeon. 8vo. p. 287. 4s. 6d. Becket.

“ *D'E Mortuis nil nisi bonum*” is an adage which the late Dr. Johnson always contested the propriety of; wishing to substitute in its place, “ *nil nisi verum*. ” Whether the present author, in his account of Mr. Hunter, has always attended to the proverb as amended by the great critic, we leave to others who may be better informed, to determine. Certain it is, he has paid very little regard to the original maxim.

The celebrity which Mr. Hunter, had attained in his profession, would naturally excite the curiosity of the medical world, respecting his general character. Mankind are ever forward to canvass the grounds upon which eminence is acquired. Some from a natural propensity, to pry into the affairs of others, and some probably from motives still less justifiable.

Mr. Foot has been long known as the declared antagonist of Mr. Hunter; much tenderness of criticism therefore will not be expected from his pen.

He arranges his performance under four different heads, relating to different periods of

Mr.

Mr. Hunter's life. *Part I. From the time of his study in the school of anatomy, and consequent transactions, to the year 1760.*

Mr. F. remarks that "to allay the tender apprehensions of those, who plaintively expressed their fears and anxieties for me, and who persuaded me to decline the work; to enlighten the blind admiration of those who, never having read a single line he has written, believed him to have been the first surgeon of his time; and to inform the implicit, but zealous pupil, who relying upon the truth and integrity of his master, without consulting his own understanding, was persuaded, that the latest discoveries and newest opinions of John Hunter, could not be found already registered in former authors; this professional life, if I mistake not, will be found to be not badly calculated."

After describing the first appearance of Mr. H. in the world as a wheelwright or carpenter, and his subsequent application to anatomy under the auspices of his brother, Dr. William Hunter, he notices the disputes that existed between the Hunters, and Monro, and Haller, on the subjects of the injection of the testis, and on the origin and use of the lymphatic vessels; and that between Mr. H. and Percival Pott, on the subject of the hernia congenita. Each of them contending warmly for the honour of the discovery, and the conten-

tion gave rise to a long continued and sufficiently virulent paper war between the parties. These disputes were likely to interest few but the parties themselves, and have long since deservedly been consigned to oblivion. Mr. F. however has not failed to range himself, a strenuous adversary, with the opponents of Mr. Hunter.

Mr. Foot does not hesitate to assert, that John Hunter, never was the author of any production which has appeared under his name. But let Mr. F. speak for himself. “ I find myself now “ approaching to that page of the life of John “ Hunter, which cannot afford me pleasure, if it “ were not derived from a conscious intention of “ supporting truth: and as I know from what “ will be told by me, that the credulity of his “ admirers will be first shocked, and from the “ natural transitions of human passions, their “ anger will be next rouzed; it is for that reason, “ and that alone, I have determined to be as “ explicit as possible.”

“ John Hunter has published on many subjects; “ and if the eye of criticism were to peruse the “ whole of them for this particular purpose, “ I do not know but the opinion would be, “ that the explanation, the language, and the “ stile of his writing were at least ample to the ex- “ pression of his ideas: and that, if there be any “ obscurities and any errors, as there most cer-
“ tainly

"tainly are in very great abundance, these do
 "not so much arise out of defect of language and
 "style in his writing, as from a native obscurity
 "in his ideas: they are most commonly, if not
 "always, the consequence of a confusion in his
 "mind."

"If I were not to enquire into the truth of
 "this question, however delicate it might appear
 "to those who wish that it should not be enquired
 "into,—that truth which is positively necessary
 "to be known, and which presses hard for the
 "clearest explanation, would hereafter be doubt-
 "ed; although I am now justified in saying, that
 "it cannot be contradicted. Posterity might
 "otherwise have said from persuasion, especially
 "from what appears upon the face of his publi-
 "cations, that John Hunter was a man of con-
 "siderable knowledge in literature;—and pos-
 "terity would prove it, in the plainest manner,
 "by referring to the papers of experiments and
 "observations now before me,—to the many
 "papers published in the Philosophical Trans-
 "actions of the Royal Society,—and to all his
 "other works."

"The truth is, that he only furnished the
 "images, and that the writing part was always
 "performed by another:—he prepared the ske-
 "leton, and another covered it with composition:
 "—he found the materials, and another made
 "them up into dresses for the public:—he was
 "inca-

" incapable of putting six lines together grammatically into English ; and, at his lectures,—
 " he was often found so far incapable of making out
 " the sense of his own notes, as to pass over the
 " subject they were meant to explain."

" It was owing to want of education, that his
 " notions of things were so very imperfect, and his
 " conceptions so very contracted : instances arising
 " from this original defect, are to be found
 " throughout his writings, and if they had been
 " confined to them alone, they might have passed
 " without observation : but they operated strongly
 " in his conduct towards others; and not only
 " the profession, but those who follow it, have
 " experienced in a very unpleasant degree his
 " vulgarity from want of the polish of education,
 " as will be made hereafter apparent."

Mr. F. maintains that all the attacks, and all the replies of the Hunters, during their anatomical disputes, were revised, corrected, and published, under the immediate direction of Dr. Smollet.

That John Hunter was not a man of learning, or clear, or elegant, in his writings ; that several of his papers, which were offered to the Royal Society, were obliged to be returned for explanation, previous to their insertion into the philosophical transactions, is a truth, which the editor of this work had ample opportunity to be informed of. But that his papers were not in general

general of his own drawing up, or that he was incapable of such a task, is what no one will readily believe, who ever partook of John Hunter's conversation.

The second part of Mr. Foot's observations relate to the time of Mr. Hunter's entrance into the army, with consequent transactions to 1770.

After observing that his attention was paid to anatomical pursuits, and scarcely at all to the science and practice of surgery, he continues,—
 “John Hunter’s education seems to have been
 “upon an inverted ratio to all other surgeons.
 “He, to become a surgeon, served a long
 “apprenticeship to anatomical pursuits, and only
 “five months to surgical: whilst others, to be-
 “come surgeons, serve their apprenticeships with
 “surgeons; and for a year or two pursue their
 “anatomical studies, and that at a period of life
 “too, when their minds are in preparation, and
 “their ages favour the reception of that impor-
 “tant acquisition to practice.”

“Anatomical information is purely a mecha-
 “nical study: whereas the art and practice of
 “surgery consist in a general knowledge of
 “established principles, and a desire for excel-
 “lence resulting from observation: the mind is
 “constantly in the exercise of improvement,
 “and practice presents frequently a case that de-
 “mands a fresh exercise of the judgment. Be-
 “sides the requisite aid of anatomy, no one can

“be

" be said to be a perfect surgeon, without having
 " spent some time in observing the practice of
 " the *materia medica*. His short residence at
 " the hospital would not allow John Hunter to
 " impress upon his mind the general outlines of
 " surgery, and for want of which his taste for
 " ever after appeared to be vitiated; and his
 " being totally unacquainted with the *materia*
 " *medica*, rendered all his prescriptions bald and
 " informal."

" But there is one saying by John Hunter
 " which appears to be so very paradoxical, that
 " from his admirers alone the explanation of it
 " must come. He constantly asserted that he
 " never read:—was it then possible for any man
 " possessing, as he did, but barely the mechani-
 " cal acquirements of anatomy, without educa-
 " tion, without reading, with five months appli-
 " cation to surgery only, and without knowing
 " any thing about the *materia medica*, to establish
 " the true excellence of the art, founded upon
 " the general principles of a surgeon? But not-
 "withstanding what he has been known to assert
 " to the contrary, I believe that he did read;
 " and I believe he was so much in admiration
 " with the idea of being supposed to make rules
 " in surgery for himself, that he hoped, by thus
 " denying that he read, to avoid being detected,
 " when he borrowed from another whatever was
 " his design to be passed for his own."

" Without

" Without there had been a fixed intention of
 " his becoming hereafter a teacher in anatomy, it
 " might be certainly considered as something too
 " much for John Hunter to continue on the pur-
 " suit; as the rewards of the art are only deri-
 " vative either from acquiring the requisite know-
 " ledge for a teacher, or from assisting the educa-
 " tion of a surgeon."

" He therefore, to lay a foundation for becom-
 " ing a practical surgeon, obtained an appoint-
 " ment, I believe, upon the staff in the army;
 " and in the year 1761, was with the army that
 " took Bellisle; and in the subsequent year, he
 " accompanied the army to Portugal, returning
 " to England in May."

" The *memorabilia* of a great man are ever of
 " some account: and therefore, although it be
 " not the leading province which I have assumed,
 " shall note a trifle or two of those occurrences,
 " which have been handed down with unerring
 " fidelity during his absence. It was at Bellisle
 " that he first took to cramming the stomachs
 " of lizards and worms, and first *discovered* a ne-
 " ver failing method of dissolving every bubo
 " without it's coming to abscess. As I have
 " treated this discovery after the manner it me-
 " rits, in my observations on his treatise on the
 " venereal disease, I shall spare any farther cri-
 " tical remark.—And it was at Portugal, that he

" made an experiment, which, as he has described it, was for ascertaining the faculty of hearing in fishes."

" These valuable portions of anecdote are drawn from what John Hunter has said of himself. But I think I need not have been so explicit upon the *discovery*, as no one upon the face of the earth would have ever ventured, or ever will, to assert for him, that he could do what he there says he did :—that he could dissolve every bubo without its coming to abscess, no one but John Hunter himself would dare to say it: but what is very unfortunate after all, no one who knows any thing of the matter ever believed him, or did he believe it himself; for in his book on the venereal disease, there are eight instances of buboes coming to abscess under his own care."

In the third part Mr. Foot gives, what he calls explanatory remarks on all his various productions, in natural history, anatomy and surgery.—On the subject of the digestion of the stomach after death: Mr. F. does not scruple to deny the truth of the three cases related by Mr. Hunter, wherein he had observed the stomach to be eroded.

" If I can take upon me to assert, that since the propagation of these three cases given by John Hunter so long back as in the year 1772, there has not been another discovered, where the

" stomach

“ stomach has been digested after death — I think
 “ I substantiate a ground for true criticism. And
 “ if I can take upon me to assert, that there is no
 “ instance to be found of any such case, before
 “ the time of John Hunter’s propagation of the
 “ idea by three cases, — I think I am authorized
 “ in saying, that I do not believe him — that I
 “ doubt both cause and effect.”

“ I cannot point out any thing more obvious,
 “ than that the digestion of the stomach would
 “ appear to the eye of *every observer*, if in reality
 “ such a fact existed. But as it will ever be found
 “ difficult to see what never happened, I must
 “ assign that as a reason why the digestion of the
 “ stomach after death has proved, from the ob-
 “ servations of all men besides John Hunter, to
 “ be a *Nonentity*. The cause of its not being seen
 “ cannot be from ignorance in anatomy or phy-
 “ siology: to see this phenomenon only requires
 “ the use of the eyes — only such a use of them as
 “ might be applied to the confirmation of an ob-
 “ je~~t~~ already established.”

The fourth part gives us a series of transactions
 from 1770 to the final close; — with an account of
 the progress and arrangement of his Museum. “ In
 “ 1770, John Hunter had the honor conferred
 “ upon him of surgeon extraordinary to his Ma-
 “ jesty. In the following year, he was married
 “ to Miss Holme, the daughter of a surgeon: she

" has borne him a son and daughter ; the former
 " is entered in the Temple, and the latter, at
 " present, is at home with her mother. To her
 " he was directed, not only by personal attrac-
 " tions, but also mental endowments, which she
 " possesses in a very eminent degree. She has
 " exhibited specimens of poetry in sonnets, which
 " for beautiful fancy, and pleasing harmony, are
 " excellent in their style : and from the blandish-
 " ments of her natural disposition, he found the
 " cares and asperities of his life soothed to the
 " end, as long as his heart continued to vibrate.
 " She was to John Hunter, what his Mariamne
 " was to de Haller ; but the abrupt stroke of
 " death deprived de Haller too soon of that bo-
 " som comfort, by which life is endeared, which
 " he mourned in accents of the most plaintive
 " and melodious poetry, and which, for a long
 " time saddened all his pursuits."

" To unbend the mind from that tedium which,
 " during the summer months, comes over every
 " man of care, stationary in this metropolis,
 " to refresh the animal functions, half poisoned
 " and debased, by anatomical miasma, — and to
 " be as little as possible out of the way of the sud-
 " den calls of a surgeon, John Hunter chose a
 " cottage at *Earl's Court*, about a mile in the
 " midst of fields, beyond *Brompton*. There
 " he sometimes retreated for fresh air, and took
 " his hobby horse along with him. Nobody of
 " common

" common curiosity could have ever passed this
 " original cottage, without being obliged to en-
 " quire, to whom it belonged. By observing the
 " back of the house, a lawn was found stocked
 " with fowls and animals, of the strangest selec-
 " tion in nature,—as if it had been, another
 " repository belonging to Brooks;—and in the
 " front, there were to be seen four figures in
 " lead or stone, representing lions,—two in a form
 " *passant* placed upon the parapet;—and on the
 " ground, two more *couchant*, guarding the dou-
 " ble flight of steps, leading to the vestibule.
 " On the sides of the area, were seen, two pyra-
 " midal collections of shells, of a very contracted
 " base, and mean height,—each of them, seem-
 " ing to conceal a subterraneous entrance to a
 " Golgotha. Over the front door was presented
 " the mouth of a crocodile, gaping tremen-
 " dously wide,

—To gorge with blood his barbarous appetite.*

" And to prove, that there lived a philosopher
 " within this humble retreat, and that a flash of
 " lightning will equally dart, on the roof of a
 " cottage of a surgeon, as on the turrets of a
 " palace of a prince—there were placed erect,
 " high above each gable wall, electrical conduc-
 " tors, daring it's temerity. Here it was that
 " John Hunter dreamed over many of his pro-
 " jects,

* Dryden.

"jects, realized experiments on animals, and
"laid the foundation of his *fable of the bees*;
"and here was his country residence during his
"life time."

"Here it was, that he pastured those buffaloes
"which he so lately, as in 1792, put into har-
"ness, and trotted through the streets of Lon-
"don, not judging, that he might have been
"fairly outrivalled, by a showman's dromedary,
"especially, if there were, and probably there
"would be, the additional effect of a monkey
"mounted on his back, playing it's little antic
"tricks. Savage beasts, said to have been snared,
"on the lofty and arborous mountains of Thibet,
"or on the dreary wilds of Boutan, and imported
"here, for autumnal exhibition, on carnival days
"at Smithfield, held in honour of St. Barthro-
"lomew, were sure to be first shewn to John
"Hunter;—their cunning parasitical keeper—
"prodigal of his illustrious name,—thus enhanc-
"ing the estimation of his rare Asiatic curiosi-
ties.—We are also told, that giants and dwarfs,
"were certainly retained by him for dissection,
"—whenever the fates should so determine it—
"whenever the sisters scissars of destiny, should
"cut the threads, on which their lives suspended."

Mr. Foot winds up the character of his hero
in the following paragraph. "The new situation
"he

" he had chosen, (Leicester-Square) was convenient and centrical: and from this time, fortune seemed highly disposed to favour his projects, and implicitly to surrender her forward controul, over any of his adventurous engagements. Every thing that John Hunter now did, was considered by the public in general, as being the best possible method, in which every thing could be done. This is very strange, yet it is very true, that miscarriages—which fairly ought to have been attributed to an inferiority of knowledge, and not to an inevitable consequence in the nature of the thing, —where the best means which were known, had failed from an impossibility or inadequacy in their power,—never affected the reputation of John Hunter. He could do such deeds, without impeachment of character, as would have destroyed the reputation of any other surgeon. Whatever has been done by him, and which has, by its notoriety, allowed of an investigation from those, most competent to compare it, with what could have been done by others,—has uniformly and constantly convinced me, — that John Hunter possessed not the common talents, for common practical surgery. This assertion can only be proved, by the result of his practice; and I do not hesitate to stake my reputation, by saying, — that from the numerous instances of rashness or insufficiency which I could adduce,

" — I am

" — I am authorized to pronounce him, to have
" been a very inferior, dangerous, and irregular
" practical surgeon."

After the specimens we have adduced, and the work abounds with such, we leave to our readers to determine, with what justice or propriety, Mr. Foot adopts for his motto, the maxim of Tacitus, — "*Sine ira & Studio, quorum causas procul habeo.*" How blind and ill directed is the admiration of the world; and how undiscerning the optics of professional men. Henceforward, let men hug themselves in their obscurity, convinced that superlative merit is there to be found where men least look for it.

X.

A Treatise on the Hydrocele; on Sarcocoele, or Cancer, and other Diseases of the Testis. By Benjamin Bell, F. R. S. Member of the Royal Colleges of Surgeons of Ireland and Edinburgh, and one of the Surgeons to the Royal Infirmary of Edinburgh. 8vo. p. 295. Bell and Bradfute, Edin. Robinson, and Murray, London, 1794.

ATTER the copious system of surgery Mr. Bell has presented to the public, it naturally would not be expected, that we should soon meet with any thing new from his pen. His reasons for the present performance will appear from his advertisement.

Mr.

Mr. B. says, "The author, in his system of surgery, delivered his sentiments on the several subjects contained in the present volume. The public will therefore expect his reasons for submitting to them, in this manner, what, in some sort, may be considered as a republication."

"The improvements that he now suggests in the treatment of hydrocele by the simple incision, he conceives to be important, and that they render the operation, easy, certain, and safe. A late attempt to bring forward again the use of injections for the cure of the hydrocele, and which had long been disused in this country, appearing to arise from an ill-founded dread of the operation by incision, he has been induced, and his experience justifies the measure, to vindicate the safety and success of this operation; and, at the same time, to give an account of the rise and progress of the mode of treatment by injection, and to subjoin his reasons for thinking that it should not be adopted."

"He also flatters himself, that the alterations he proposes in the operation in the farcocele, will be found to prove useful."

"Farther, he complies with a request made by many, to have his observations on the hydrocele, and diseases of the testis, comprised in a distinct treatise."

" This information the author has thought it
 " right to communicate, that those who are al-
 " ready possessed of his system of surgery, may
 " judge whether they should have the present pub-
 " lication or not."

After a sufficiently minute description of the testicle, with its coats, and the mode of its descent from the cavity of the abdomen, into the scrotum, Mr. Bell proceeds to consider the different varieties of hydrocele, which he divides into two species, anasarcous and the encysted. In the former, he includes all those cases, where the water is diffused over all the substance of the part in which it is seated; it is not collected in any particular cavity, but occupies equally, all the cells of the part: In the encysted, the water is collected in one distinct bag, and a fluctuation of a fluid is, in general, perceived in it. The scrotum, with its contents, the testicle and its appendages, are liable to both varieties of the disease; and the spermatic cord, with its coverings are also liable to both.

The author recommends drawing off the water in the anasarcous hydrocele, by punctures, in preference to scarification.

In the encysted hydrocele, or hydrocele of the tunica vaginalis, Mr. B. has not once succeeded in removing the disease, by treating it in the manner recommended by Mr. Keate, viz. by the application of a solution of crude sal ammoniac in spirits of wine, and vinegar.

Having

Having remarked, that for the radical cure of the hydrocele, it is necessary that the cavity, that had contained the water, should be obliterated, and that this is to be effected, by inflammation, and consequent adhesion of the sides, to the tunica albuginea : the author proceeds to treat of the different methods employed for the purpose. On a comparison of the three methods, by the seton, caustic and incision, he gives the preference, as he had done before, in his system of surgery, to that by incision. He endeavours to obviate the objections that might arise to its use, from the pain attending the performance of it, and the degree of inflammation which might supervene. After the incision has been made, he inserts between the tunica vaginalis and the body of the testis slips of soft linen, smeared with some simple ointment, which causes much less irritation than dry lint, and is much easier in the removal afterwards. In other respects, the directions Mr. Bell lays down, are much the same with his former ones on the same subject.

" I have now" says Mr. B. " performed this operation in one hundred and sixty-five cases, " and in every variety of age, from the third to " the seventy fifth year; not one of the number " has either died, or been in danger; nor has the " disease returned in any of them. In various " instances, at first the inflammation, as I have " observed above, arrived at a considerable height;

" but not in a single instance, since the operation
" has been done in the manner I have mentioned."

The last method of cure which Mr. Bell notices, and which has been of late particularly recommended by Mr. Earle, of St. Bartholomew's hospital, is the injecting of wine or other liquids into the tunica vaginalis, after having discharged the water by a trocar. This method of treating hydrocele is by no means a modern invention: above a century ago we find it recommended by *M. Lambert*, in his *œuvres chirurgicales*, published at Marseilles. He used a strong solution of corrosive sublimate in lime water, and enumerates many cases, in which it proved successful. Some time after this, it was used in Scotland, and spirits of wine were employed for the purpose: but the violent pain and inflammation which these must have excited, probably occasioned their being laid aside. The injection now commonly made use of, is red wine, diluted with a fourth or fifth part of water. Notwithstanding what Mr. Earle has said on the subject, Mr. Bell maintains that it is not near so certain a remedy, as either of the others; and that the pain which is saved in the operation, is not worth consideration, when put in competition with the certainty of a cure. He is of opinion that injections act chiefly by their astringency, and not by destroying the cavity of the tunica vaginalis. He judges so from the little pain that is often experienced in those cases, and from the returns of
the

the disease, which not unfrequently take place soon afterwards, and which Mr. B. states at a ninth or tenth part of all on whom the operation is performed, and at five in eight or nine, where the disease returns at some remote period. He enumerates the objections that may be made to this mode of cure. The inflammation will sometimes arise to such a height, as to produce suppuration within the cavity; when this happens, besides the pain and risk attending the inflammation, an incision equally extensive for discharging the matter will be necessary as if the mode of cure by incision had been adopted at first. It does not admit of an examination of the testis, with accuracy. The strength of the injection necessary for producing inflammation of the tunica vaginalis may be more than the testis can bear.

Upon the whole, when such difference of opinion exists on practical subjects, it is experience alone that can determine ultimately in favour of one or the other.

On the subject of the hydrocele of the hernial sac, of the anafarcous hydrocele of the spermatic cord, and of the encysted hydrocele of the spermatic cord, we observe nothing new.

When speaking of farcocele, Mr. B. observes, that it is unnecessary to enumerate, either internal medicines, or external applications, as none have been employed to advantage, for the removal of this

this disease. Cicuta and Belladonna, so much celebrated in cancerous affections, have no effect in arresting its progress, or in mitigating its symptoms. It is on the extirpation of the diseased parts, that we alone rely for a cure.

Mr. Pott had said that a hernia humoralis, from a venereal cause, never degenerates into cancer. Mr. B. is however, from observation, of a different opinion. He is convinced, that although tumors in this part, arising from lues venerea, are most frequently cured by mercury, yet, occasionally, and in particular constitutions, the peculiarities of which, however, we are not acquainted with, they do certainly end in schirrus of the worst kind; a disease which might never probably have appeared, if the original venereal taint had not acted as an exciting cause of it. In every doubtful case, when a venereal infection is suspected to be the cause of the tumor; blood letting, when the pulse is full, an open belly, a cooling diet, a horizontal posture, a proper suspensory bandage, and a well directed course of mercury, will commonly remove it: but, when these means are employed without advantage; and especially, if, during their application, the tumor, instead of decreasing, becomes gradually worse; as soon as, from its increase, there appears to be any risk of its advancing beyond the reach of operation, it ought then, without farther hesitation, to be extirpated, whatever the cause might be by which it was at first produced.

Mr.

Mr. B. has subjoined plates of the instruments, necessary in diseases of the testicle and its appendages.

XI.

A Treatise on the Structure, œconomy, and Diseases of the Liver, &c. By William Saunders, M. D. Fellow of the College of Physicians, of the Royal Societies of London and Edinburgh, and senior Physician to Guy's Hospital. 8vo. p. 232. 4s. 6d. Robinson's, London. 1793.

In the very respectable work before us, Dr. Saunders enters into an anatomical description of the liver; its œconomy; and the diseases to which it is liable. In his third chapter, he relates the result of some experiments instituted for the purpose of ascertaining the nature of the blood circulating through the vena portarum. Here Dr. S. finds no ground for supposing that the blood, in its course through the spleen receives any changes which enable it the better to concur with the liver in the secretion of the bile. The changes which have been ascribed to the passage of the blood through the spleen are a greater degree of fluidity, and a putrescent tendency. On a comparative examination of blood taken

taken from the splenic artery and vein, Dr. S. could find no indications of such alterations having taken place. Why venal blood shou'd be better adapted to the secretion of the bile, than common arterial blood, from which other secretions are supplied, is exceedingly difficult to determine: but that the fact is so, is probable from the exception itself of the liver to nature's law, in the œconomy of other glands. Yet how shall we explain a fact that lately occurred to Mr. Abernethy: He found in a child apparently about a year old, that the vena portarum, instead of conveying its blood into the substance of the liver, prior to its termination in the inferior vena cava by the intervention of the hepatic veins, the blood returned by the veins of the different chylopoietic organs, was conveyed by the vena portarum immediately into the vena cava inferior, near to the origin of the emulgent veins. The hepatic artery, which appeared to be somewhat enlarged, was the only vessel carrying blood to the liver, and in this individual instance, it appeared to perform the double function of nutrition and secretion. Bile was found both in the intestines and gall bladder. The latter, though of its usual size, contained only a small portion of this fluid, the properties of which were very similar to those of the bile in other young subjects. This child appeared in every respect well nourished.

Dr. S. next inquires into the interior structure of the liver, and concludes that the secretion of bile is effected in the very ultimate branches of the vena portarum which communicate with the *pori biliarii*. He traces its course from these into larger branches, and thence gradually into the trunk of the hepatic duct. The frequent but momentary interruptions of the passage of the bile, into the duodenum, occasioned by the peristaltic motion of the intestines, compressing, at every instant, the orifice of the *ductus communis*, produces a retrograde motion of the bile through the cystic duct, into the gall bladder, which is again occasionally compressed by the surrounding parts, and its contents evacuated in the duodenum, through the *ductus communis choledochus*.

Having finished the description of this organ, and its œconomy, the author proceeds to its diseases, and first, jaundice, arising from an obstruction in the ducts, impeding the passage of the bile into the Intestine. This obstruction may arise from the presence of a gall stone, either in the hepatic, or common duct; and this is by far the most common cause of jaundice. Sometimes a stricture of the common duct is an obstructing cause, and this is usually of that permanent kind, connected with a diseased condition of these parts, that a removal can hardly be hoped for.

K

Dr.

Dr. S. does not admit a spasmodic stricture of the duct, returning by paroxysms, as a cause of jaundice, upon this ground, that the biliary ducts of a living animal possess no marks of irritability, when acted upon by *stimuli*.

Another cause of obstructed bile, consists in a pressure on the duct by the head of the pancreas, which is sometimes found in a schirrous state ; and which from its connection, may easily produce such an effect.

The author considers the yellow fever of the West Indies, as an instance of jaundice, arising from a redundant secretion, and not from obstruction of the biliary ducts.

On the question, how the bile gets into the blood vessels, whether by absorption of the lymphatics, or by regurgitation through the biliary ducts into the hepatic veins? Dr. S. is of opinion that it is by both ways. He relates some experiments made on living dogs, which seem to support his idea.

From various experiments on the chemical qualities of the bile Dr. S. concludes, that it consists of, first, water, impregnated with the odorous principle; secondly, a mucilaginous substance resembling the albumen ovi; thirdly, a resinous substance containing the colouring principle,

principle, and bitter taste: and, fourthly, the mild mineral alkali. On an examination into the nature of biliary calculi he infers, that they consist chiefly of a resinous matter, with a small proportion of earth, apparently calcareous, combined with the mineral and volatile alkali. But it is proper to remark, that biliary calculi differ a good deal in their sensible qualities; it is therefore probable that a difference in their component parts also exists. Dr. S. had not opportunity of examining the varieties.

He considers the principal use of the bile to be, as a natural and habitual *stimulus*, to the intestines, keeping up their energy and peristaltic motion.

An increased secretion of bile is a frequent cause of disease, and is what the inhabitants of warm climates are extremely subject to. An excess of bile in the primæ viæ produces a general languor of the body, with nausea, foul tongue, loss of appetite and indigestion; frequently diarrhoea is produced. The skin becomes yellow and the general aspect of the patient is extremely unhealthy. These symptoms are very frequently observed in people who return from a residence in warm climates. In these cases Dr. Saunders advises, that they should drink from half a pint to a pint of warm water every

every morning; by this means, he thinks, all the effects of the Bath or other warm springs may be procured; except such as may be attributed to change of scene. He dissuades from the use of emetics.

The cholera morbus is a disease depending on an increased secretion of bile, and in this case Dr. S. recommends the mode of treatment pointed out long ago by Sydenham.

The inflammation of the liver is divided by the author into two species, the acute, and chronic. The seat of the former he supposes to be the hepatic artery; of the latter, the vena portarum. The first is to be treated by the common anti-phlogistic remedies. In the chronic inflammation of the liver, mercury has been found to be the best remedy. The acute inflammation sometimes subsides into the chronic, when the treatment must be regulated accordingly. Dr. S. cautions us against the use of mercury in the acute stage.

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XII.

Medical and Surgical Observations. By A. G. Richter, M. D. Professor of Medicine in the University of Goettingen, &c. Robinsons, 1794, 8vo. p. 333. 5s. boards.

IT cannot fail to be interesting to the medical men of this country, to be acquainted with the state of their profession in one of the most celebrated Universities abroad. Professor Richter has deservedly acquired no small share of celebrity on the Continent. The present work is the result of his observations on various medi-

cal and chirurgical subjects. The reader will discover throughout that he is an acute observer, and intimately acquainted with all the learning of the ancients. While he has thus studied the ancients, he has not neglected modern authors, and in particular has paid great respect to the knowledge and opinions of practitioners of our own country. It will be found, however, that the learned professor still retains many doctrines which have long since been exploded in this country.

The work is divided into different chapters, without any particular order, consisting of cases, interspersed with the author's remarks.

In his first chapter he treats of diseases of the breasts. He recites two cases, tending to shew how difficult it is to distinguish carcinomatous, from other tumours of the breasts; and how probable it is that people often believe that they have extirpated cancers, when they have only removed a tumour of a benign nature. The first was of a young woman of 30 years of age, who for three years had a tumour in the breast, as big as a large hen's egg: it was quite hard, had begun to be painful about a month before, and every physician whose advice she had asked, had declared it to be an occult cancer. The whole lump was painful to the touch, and quite surrounded with varicose veins. The skin above it was of a dark red.

red colour, and a little inflamed: however, the operation was put off, as the pain was general throughout the lump, not very violent, neither burning nor lancinating, but chiefly on account of an obscure fluctuation which it was imagined was discovered at one point. By the application of emollient poultices, the fluctuation was increased, and became quite distinct; the suppuration was compleated by the third week, and on opening the tumour, a quantity of granulated pus flowed out, and nothing more either of swelling or hardness was to be felt. It healed in twelve days, without any one occurrence worth mentioning. This case the professor considers as clearly scrophulous.

The second case was a milk tumour, which our author and others had taken for a true schirrus, and which it was determined to remove. On the evening before the day of operation, as he was once more examining the lump, which was pretty deep and firm, and while (chiefly with the intention of trying its mobility) he griped it on both sides deep and firmly, it vanished suddenly from his fingers, and a yellowish thick milk flowed from the nipple.

The professor relates several cases of cancer that he had operated on successfully. Indurated glands in the axilla, he says, are not so much to

be dreaded as is generally believed. They appear, like venereal buboes, sometimes to arise from sympathy, and at least do not always contraindicate the operation; as in two cases which came under his care; and in which extirpation of the mammae was performed, the induration of the glands in the axilla disappeared gradually after the operation. These swellings of the axillary glands even come on and disappear alternately.

It is laid down as a rule by professor Richter always to remove the whole glandular substance of the breast, along with the schirrus, for the following reasons:—With regard to the pain of the operation there is no great difference. What remains after the extirpation of a considerable schirrus, is of no use to the patient; the breast is generally unfit for suckling a child. When the whole glandular substance of the breast is removed, the wound closes more conveniently, and heals more readily *per reunionem* than when the schirrus alone is removed. But above all, the recurrence of the disease after the operation, is not so much to be dreaded. The glandular substance of the breast is often diseased, though it cannot be felt externally, especially when it is covered with much fat; hence it is always most secure to remove it in such cases entirely, since it can be of no use after the operation.

It is a good rule always to tie the bleeding vessels after extirpation, as troublesome and even dangerous haemorrhages are often the consequence after the operation, where this has been neglected.

Professor Richter has employed *arsenic* in cancerous ulcers of the face with much advantage, and without any bad or remarkable effect. He has generally used it in the form of Bernhard's mixture:—See Chir. Bibl. vol. VII. p. 482, or Journ. de Medecin. vol. LVII, p. 258.* The pain which it occasions is for the most part inconsiderable. It makes a crust; if after the separation of the crust, the ulcer does not look clean, or if it become again suspicious after a few days, it is to be applied a second time. In some cases it has been applied as often as six times successively, before the ulcer healed, and always without any bad effects.

The

* The following is Bernhard's formula.—Take artificial cinnabar, dr. 2; ashes of old leather burnt, gr. 8; sang. dracon. gr. 12; white arsenic, grs. 40: let these be finely powdered, and mixed in a glass mortar, and set by for use. When it is used some of it is mixed with too much water as to form a thin paste, which by the means of a small hair pencil is applied to the whole surface of the ulcer, about the thickness of a shilling; after which the whole is covered with agaric or byssus.

The following case the professor had from a respectable physician, and, besides, it passed almost under his own eye.

The patient had an open cancerous ulcer in the left breast, whose appearance and smell were terrible. It was of an oval form, and extended from the sternum nearly to the axilla, and from the nipple to the clavicle. The edges of it were turned back and very hard. The fluid discharged from it was thin and ichorous. Several glands in the axilla were hard and immoveable.

Arsenic was applied as above, three different times. The first time a part of the ulcer was covered with it, which had a particularly bad appearance, and made nearly a fourth part of the whole ulcer. The second time it was laid over the whole ulcer. The third time it was applied only to some small places which still looked ill. In six days after the first application, a slough separated, which was a quarter of an inch thick. The second application had more effect. After seven days a slough separated from the whole ulcer, which was between two and three inches thick, and weighed twelve ounces. After the second sloughing, the bad smell vanished almost entirely, the ulcer put on a clean appearance, and most of the indurations disappeared. No particularly bad effects followed these applications; only, from the
third

third and last, when it was laid upon some still-remaining hard and bad-looking places, convulsions took place, which however soon subsided.

The ulcer now became evidently better, and as it amended, the axillary glands became smaller, softer, and more moveable.

A considerable surface of the ulcer cicatrized in a short time, and the remaining part discharged the most laudable pus.

When the ulcer was all healed, except a very small part, she thought she could manage the rest herself, and went home. After which there were no accounts of her, which is much to be regretted.

The subject of the second chapter is jaundice. Some cases are related which prove that obstruction to the passage of the bile into the duodenum is not a necessary nor constant occurrence in this disease.

The third chapter treats of the fluxus coeliacus, which has been defined "*excretio alvi puriformis vel chyliformis, cum tenesmo, febre lenta et consumptione.*" The author relates two cases which he thinks corresponded with this definition, but which were merely local affections of the rectum, of the same nature as *fluor albus* in the vagina, and which he thinks might properly enough be termed *fluor albus intestini recti.*

Chapter.

Chapter 4th.—*Of diabetes.* It has been usual to consider *diabetes* as the effect of relaxation of the kidneys, or as depending on a general colliquation of the fluids. Our author does not suppose either of these to be the immediate cause of this affection: he supposes the disease to be generally of a spasmodic nature, occasioned by a stimulus acting on the kidneys; hence a *secretio aucta urinæ*, and sometimes *perversa* is the consequence. This disease appeared in one patient after a fever. He made at least thirty pound of urine daily, which was as clear as water. The disease was of four weeks standing.—The fever which to all appearance caused the diabetes, professor Richter considered of a biliary character; and as he found the pulse small, tense, irritated and quick; as the patient complained of an uneasy sensation and fulness in the region of the stomach, and as all these complaints grew worse towards evening, he directed an emetic.—A very great quantity of biliary matter was evacuated, and the next morning there was not a vestige of diabetes, nor of any other complaint.

The general inefficacy of tonic and strengthening remedies in the treatment of this complaint, as acknowledged by most of the writers on the subject; the drawing, burning, and other painful sensations in the region of the kidneys; an uneasy tightness or uncommon heat in the region of the stomach; the irritated pulse, palpitation of the heart, or starting of

of the limbs, which so frequently accompany this disease, are circumstances much against the idea of its depending on debility of the kidneys, or of the system at large. They are indeed manifest proofs of a diseased action going on in the kidneys, which might readily produce all the symptoms above enumerated. The preternaturally enlarged state of the kidneys, which has sometimes been discovered on dissection, proves also that they have undergone considerable alteration of action.

The fifth chapter is on dysentery.—Our author takes much pains to shew that the dysentery does not at all depend upon biliary corrupt acrimonies in the intestines; that it cannot at all be cured by emetics, and still less by purgatives, but that it is a rheumatic or catarrhous affection of the intestines, particularly of the great guts, and that the proper remedies for the disease are sedatives and diaphoretics. That the immediate cause of dysentery is an inflammation of the mucous membrane of the large intestines, has been very generally admitted in this country for several years past, though, from what appears above, it seems to be otherwise in Germany. Allowing however, that the disease does not depend on the presence of biliary acrimony, we see no reason for discarding the use of emetics and purgatives. Experience has amply proved their utility, though upon other principles than that of simple evacuation. Vomiting is a

powerful remedy in most inflammations, and is, perhaps, one of the best diaphoretics. Notwithstanding the frequent mucous dejections which take place in dysentery, the natural faeces are very commonly retained; hence the utility of purgatives.

The professor gives the history of three very considerable dysenteric epidemics which occurred within a few years in Germany.—The cure principally depended on allaying pain and irritation, and on raising a gentle diaphoresis. Opium and antimony effected this. Opium did not bind up the belly; it lessened the number of stools, and made them stercoreaceous. In several cases the dry, yellow, brown tongue became moist. Whenever purgatives appeared necessary, our author exhibited calomel. He affirms that no purgative operates so powerfully, and at the same time so gently as calomel. It even appeared to have an essential effect on the disease itself; most purgatives, as rhubarb and neutral salts, increased the pains; calomel frequently diminished them remarkably. Warm fomentations to the abdomen with ol. chamomel et hyoscyam, and frictions with lin. vol. cam. were of much use in alleviating the pains. When the pains were fixed or constant, a blister to the abdomen produced the best effects. In some patients a lientery remained after the disease, which was removed by columbo root, after all other medicines had failed.

The sixth chapter is on vomiting of blood.— Some cases are related which were supposed to be owing to the irritation of bile, and which were cured by vomiting and purging.

On the subject of hydrocele, our author says he has often performed the operation, and always by incision. Not the smallest unlucky accident ever happened to him, which could have induced him to chuse any other mode of operating. He relates one case of what he terms *hydrocele cystica*, where he found in the cavity three round bodies of the size of a hazel nut; they were of an osseous substance, and covered with a cartilaginous crust, and no where attached, but floated, quite disengaged, in the water.

The professor considers, that in all spasmodic diseases, and particularly in epilepsy, the disease often continues from custom alone, after the original cause has long ceased to act, and that in the treatment, every thing depends upon nature being made to discontinue this custom for a time, so that she may come to forget the disease. There is no medicine he thinks will so certainly prevent an epileptic fit, as a vomit given an hour before the attack, when this can be foreseen. Several cases are related which were cured by this means.

The operation for the fistula lachrymalis, is mentioned as in general an uncertain operation. It seldom restores the functions of the lachrymal

ducts to their former perspiration; there generally remains a falling of tears over the cheek; the professor therefore advises every one against undertaking this operation, unless some symptom attend the disease which is either dangerous or very troublesome. When it is judged proper, he deems it indispensably necessary to perforate the os unguis with a hot iron, as was practised by the ancients. It is the only security against the closing of the aperture, as it makes the opening by a real loss of substance.

Chap. 11 treats of ischias nervosa.

Chap. 12, a case of ulceration of the tongue, cured by a solution of white vitriol in sage tea, used frequently as a gargle.

Acid in the primæ viæ is considered by our author as of two kinds, arising from two different sources. Sometimes it is the consequence of a *corruptio spontanea* of acids taken in by the mouth, or of meat and drink which have become sour. Medicines which strengthen digestion, with an anti-acid diet, generally cure the patient of this acid.

But sometimes the patient is incessantly tormented with acid, eat what he will, though he only take animal food. In this case, the acid is not the product of a *corruptio spontanea*, but a *secretio per-versa liquorum menstruorum*. The patient, as Kœmpf says,

says, has a brewery of vinegar in his stomach. The digestive fluids themselves are sour. The bile itself in such cases is as sour as vitriolic acid. These cases are attributed to some kind of irritation which disturbs the secretory organs; and pills are recommended, composed of equal parts of asafœtida and ox's bile, which are said to be almost specific. Perhaps they act as anti-spasmodics, counteracting the irritation.

The seventeenth chapter treats at length of bilious fevers. The reader will find here much of the obsolete doctrines of acrimony, concoction, and crisis.

Chap. 18, on amputation of the thigh. Various means have been contrived for preventing the projection of the bone after amputation of the thigh; all of these however, have often been employed without success. The two principal means from which we expect most, are the forcible retraction of the muscles during the operation, in order to saw off the bone as high as possible; and the quick healing and uniting of the wound without suppuration. Professor R. relates a case in which he sawed off the bone as high up as it can well be done, and where the wound united as early as possible, and yet eighteen months afterwards the muscles had retracted so much, that the bone projected a whole hand's breadth, covered only with the skin.

Professor

Professor R. has lately restored to sight several patients who laboured under gutta serena. In all those cases he thinks the cause of the disease seemed to be seated in the abdominal viscera, for he cured them all, he says, by means of medicines which dissolve obstructions in the viscera, and evacuate. He affirms, that in this way he has not unfrequently performed a complete cure, in cases where he hardly expected it, and in some, where the disease had actually continued for several years.—After vomiting, the following pills are recommended; R. gum. ammon. ass. foetid. sapon. venet. rad. valerian summitat. arnic. à 3ij. tart. emet. gr. 18. ft. pil. pond. gran. ij. quar. sumt. ter quotid. no. 15. It is often necessary to persevere in the use of these remedies six or eight weeks, before any amendment is perceived. A gradual increase of the dose is also requisite. The first symptoms of amendment which give reason to hope for success in the cure of the gutta serena, are the disappearance of the fiery sparks from before the eyes, and of the sensation of tension in the ball of the eye.

Chap. 20. Cases of nervous consumption. These cases of catarrh were cured by the *lichen islandicus* & *dulcamara*.

Chap. 25. Case of fungus articuli. By this term the professor means a swelling that sometimes arises about the patella, which is round, pretty regularly

gularly circumscribed, not painful, and in which an evident fluctuation is felt. It sometimes occupies both sides of the patella, and is sometimes chiefly confined to the place of the ligament of the patella. It frequently surrounds the whole knee-pan like a sausage. Such a tumour should on no account be opened. In general, nothing flows out, except a little bloody serum, and threatening symptoms ensue, which are connected with real danger. The following plaster was found efficacious in this complaint: R. gum. ammon. oz. 1; solve in acet. scillit. q. s. ad consistentiam unguent. tenuior. which being spread thick on leather, is to be applied to the whole knee. The joint of the elbow is also liable to similar swellings.

XIII.

ZOONOMIA; or the Laws of Organic Life. Vol. I.

By Erasmus Darwin, M. D. F. R. S. Author of the Botanic Garden. 4to. p. 586. Johnson, London. 1l. 5s. boards.

WE regret exceedingly our inability, consistently with our limits, to do justice to the very ingenious work before us. We must content ourselves with presenting to our readers as general

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an account as possible, at the same time, such an one as may convey a tolerable idea of this elaborate publication.

The purport of the work, the author observes in his preface, is an endeavour to reduce the facts belonging to ANIMAL LIFE into classes, orders, genera, and species; and, by comparing them with each other, to unravel the theory of diseases. It happened, perhaps unfortunately for the enquirers into the knowledge of diseases, that other sciences had received improvement previous to their own; whence, instead of comparing the properties belonging to animated nature with each other, they, idly ingenious, busied themselves in attempting to explain the laws of life by those of mechanism and chemistry; they considered the body as an hydraulic machine, and the fluids passing through a series of chemical changes, forgetting that animation was its essential characteristic.

A theory founded upon nature, that should bind together the scattered facts of medical knowledge, and converge into one point of view the laws of organic life, would doubtless on many accounts contribute to the interests of society. It would capacitate men of moderate abilities to practise the art of healing with real advantage to the public; it would enable every one of literary acquirements to distinguish the genuine

genuine disciples of medicine, from those of boastful effrontery, or of wily address; and would teach mankind in some important situations, *the knowledge of themselves.*

There are some modern practitioners, who declaim against medical theory in general, not considering, that to think is to theorize; and that no one can direct a method of cure to a person labouring under disease, without thinking, that is theorizing; and happy, therefore, is the patient, whose physician possesses the best theory.

The MOTIONS OF MATTER are divided by our author into two kinds, primary and secondary. The secondary motions are those which are given to, or received from, other matter in motion. These are governed by the laws of mechanics.

The primary motions of matter are divided into three classes, those belonging to gravitation, to chemistry, and to life; each class has its peculiar laws. The third class includes all the motions of the animal and vegetable world; as well as those of the vessels, which circulate their juices, and of the muscles, which perform their loco-motion, as those of the organs of sense, which constitute their ideas. This last class of motion is the subject of the present work.

Speaking of animal motions and ideas, Dr. Darwin endeavours to demonstrate, that the retina, and other organs of sense, possess a power of motion, as well as what are commonly called the moving fibres of the body, and that these motions constitute our ideas.

The organ of vision consists of a fibrous part as well as of the nervous medulla, like other white muscles: and hence, as it resembles the muscular parts of the body in its structure, we may conclude, that it must resemble them, in possessing a power of being excited into animal motion. The retina of an ox's eye was suspended in a glass of warm water, and forcibly torn in a few places; the edges of these parts appeared jagged and hairy, and did not contract and become smooth like simple mucus, when it is distended till it breaks; which evinced that it consisted of fibres. This fibrous construction became still more distinct to the sight, by adding some caustic alkali to the water. It would appear, that as the muscles consist of larger fibres intermixed with a smaller quantity of nervous medulla, the organ of vision consists of a greater quantity of nervous medulla intermixed with smaller fibres; and there is reason to conclude from analogy, that the other immediate organs of sense, as the portio mollis of the auditory nerve, and the rete mucosum of the skin, possess a simi-

a similarity of structure with the retina, and a similar power of being excited into animal action.

Several experiments with regard to vision are related, which shew, that vision is not the effect of the impression of light on a passive organ, but that the retina is really excited into action, similar, as far as we are able to judge, to what takes place in muscular action.

That the organs of sense convey sensations in consequence of animal motion being excited in them, is probable, from considering the great analogy they bear to the larger muscles of the body. It appears, that they are excited into action by the irritation of external objects like the muscles; are associated together like muscular motions; act in similar time with them; are fatigued by continued exertion, like them; and finally, the organs of sense are subject to inflammation, numbness, palsy, convulsion, and the defects of old age, in the same manner as the muscular fibres. Numerous proofs are adduced as proofs of these positions.

Dr. Darwin next proceeds to point out the general laws of animal motion.

I. The fibres, which constitute the muscles and organs of sense, possess a power of CONTRACTION.

The circumstances attending the exertion of this power of contraction, constitute the laws of animal motion, as the circumstances attending the exertion of the power of ATTRACTION constitute the laws of motion of inanimate matter.

II. The spirit of animation is the immediate cause of the contraction of animal fibres, it resides in the brain and nerves, and is liable to general or partial diminution or accumulation.

III. The stimulus of bodies external to the moving organ, is the remote cause of the original contractions of animal fibres.

IV. A certain quantity of stimulus produces irritation, which is an exertion of the spirit of animation exciting the fibres into contraction.

V. A certain quantity of contraction of animal fibres, if it be perceived at all, produces pleasure; a greater or less quantity of contraction, if it be perceived at all, produces pain; these constitute sensation.

VI. A certain quantity of sensation produces desire or aversion; these constitute volition.

VII. All animal motions which have occurred at the same time, or in immediate succession, become so connected, that when one of them is repro-

reproduced, the other has a tendency to accompany or succeed it. When fibrous contractions succeed or accompany other fibrous contractions, the connection is termed association; when fibrous contractions succeed sensorial motions, the connection is termed causation; when fibrous and sensorial motions reciprocally introduce each other, it is termed catenation of animal motions. All these connections are said to be produced by habit, that is, by frequent repetition. These laws are evinced by numerous facts, which occur in our daily exertions; and are afterwards employed to explain the more recondite phænomena of the production, growth, diseases, and decay of the animal system.

The spirit of animation has four different modes of action, which cause all the contractions of the fibrous parts of the body. In other words, the actions of the system are produced by four different kinds of stimuli. The first is *Irritation*, which is an exertion or change of some extreme part of the sensorium residing in the muscles or organs of sense, in consequence of the appulses of external bodies. 2. *Sensation*, which is an exertion or change of the central parts of the sensorium, or the whole of it, *beginning* at some of those extreme parts of it, which reside in the muscles or organs of sense. 3. *Volition*, which is an exertion or change of the central parts of the

the sensorium, or the whole of it, *terminating* in some of those extreme parts of it, which reside in the muscles or organs of sense. 4. *Association*, which is an exertion or change of some extreme part of the sensorium, residing in the muscles or organs of sense, in consequence of some antecedent or attendant fibrous contractions. These sensorial motions are not here supposed to be fluctuations or refluxuations of the spirit of animation; nor are they supposed to be vibrations or revibrations; nor condensations or equilibra-tions of it, but to be changes or motions of it peculiar to life.

There are three circumstances to be attended to in the production of animal motions. First, the stimulus. Second, the sensorial power. Third, the contractile fibre. First, a stimulus, external to the organ, originally induces into action the sensorial faculty termed irritation; this produces the contraction of the fibres, which, if it be perceived at all, introduces pleasure or pain; which in their active state are termed sensation; which is another sensorial faculty, and occasion-ally produces contraction of the fibres; this pleasure or pain, therefore, is to be considered as another stimulus, which may either act alone, or in conjunction with the former faculty of the sensorium, termed irritation. This new stimulus of pleasure or pain, either induces into action
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the sensorial faculty termed sensation, which then produces the contraction of the fibres; or it introduces desire or aversion, which excite into action another sensorial faculty, termed volition, and may therefore be considered as another stimulus, which either alone or in conjunction with one or both of the two former faculties of the sensorium, produces the contraction of animal fibres. There is another sensorial power, that of association, which perpetually, in conjunction with one or more of the above, and frequently singly, produces the contraction of animal fibres, and which is itself excited into action by the previous motions of contracting fibres.

The word stimulus, therefore, is used by our author, for any of those four causes, which excite the four sensorial powers into action, not confining it as has been usually done, simply to express irritation.

The quantity of motion produced in any particular part of the animal system will be as the quantity of stimulus, and the quantity of sensorial power, or spirit of animation, residing in the contracting fibres. Where both these quantities are great, *strength* is produced, when that word is applied to the motion of animal bodies. Where either of them is deficient, *weakness* is produced,

produced, as applied to the motions of animal bodies.

As the sensorial power or spirit of animation, is perpetually exhausted by the expenditure of it in fibrous contractions, and is perpetually renewed by the secretion or production of it in the brain and spinal marrow, the quantity of animal strength must be in a perpetual state of fluctuation on this account; and if to this be added, the unceasing variation of all the four kinds of stimulus above described, which produce the exertions of the sensorial powers, the ceaseless vicissitude of animal strength becomes easily comprehended.

If the quantity of sensorial power remains the same, and the quantity of stimulus be lessened, a weakness of the fibrous contractions ensues, which may be denominated *debility from defect of stimulus*. If the quantity of stimulus remains the same, and the quantity of sensorial power be lessened, another kind of weakness ensues, which may be termed *debility from defect of sensorial power*; the former of these is called by Dr. Brown, in his Elements of Medicine, direct debility, and the latter indirect debility. The coincidence of some parts of this work with corresponding deductions in the Brunonian Elementa Medicinæ, a work (with some exceptions) of

of great genius, must be considered as confirmations of the truth of the theory, as they were probably arrived at by different trains of reasoning.

Thus in those who have been exposed to cold and hunger, there is a deficiency of stimulus. While in nervous fever there is a deficiency of sensorial power. And in habitual drunkards, in a morning before their usual potation, there is a deficiency both of stimulus and of sensorial power. While, on the other hand, in the beginning of intoxication, there is an excess of stimulus; in the hot-ach, after the hands have been immersed in snow, there is a redundancy of sensorial power; and in inflammatory diseases with arterial strength, there is an excess of both.

When a stimulus is repeated more frequently than the expenditure of sensorial power can be renewed in the acting organ, the effect of the stimulus becomes gradually diminished.

When a stimulus is repeated at uniform intervals of time, with such distances between them that the expenditure of sensorial power in the acting fibres becomes completely renewed, the effect is produced with greater facility or energy. For the sensorial power of association is combined with the sensorial power of irritation; or, in common

language, the acquired habit assists the power of the stimulus.

When a stimulus has been many times repeated at uniform intervals, so as to produce the complete action of the organ, it may then be gradually diminished, or totally withdrawn, and the action of the organ will continue. For the sensorial power of association becomes united with that of irritation, and by frequent repetition becomes at length of sufficient energy to carry on the new link in the circle of actions, without the irritation which at first introduced it.

When a defect of stimulus, as of heat, recurs at certain diurnal intervals, which induces some torpor or quiescence of a part of the system, the diurnal catenation of actions becomes disordered, and a new association with this link of torpid action is formed; at the next period the quantity of quiescence will be increased, supposing the same defect of stimulus to recur, because now the new association conspires with the defective irritation, in introducing the torpid action of this part of the diurnal catenation. In this manner many fever fits commence, where the patient is for some days indisposed, at certain hours, before the cold paroxysm of fever is completely formed.

If a stimulus, which at first excited the affected organ into so great exertion as to produce sensation, be continued for a certain time, it will cease to produce sensation, both then and when repeated, though the irritative motions, in consequence of it, may continue or be re-excited.

If a stimulus excites an organ into such violent contractions as to produce sensation, the motions of which organ had not usually produced sensation, this new sensorial power, added to the irritation occasioned by the stimulus, increases the activity of the organ, as in inflammation.

A quantity of stimulus, greater than natural, producing an increased exertion of sensorial power, whether that exertion be in the mode of irritation, sensation, volition, or association, diminishes the general quantity of it. The same excess of stimulus on any particular organ, diminishes the quantity of it in that organ.

A quantity of stimulus, something greater than the last mentioned, or longer continued, induces the organ into spasmodic action, which ceases and recurs alternately.

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A quantity

A quantity of stimulus, greater than that last mentioned, or longer continued, induces the antagonist muscles into spasmodic action.

A quantity of stimulus still greater, or longer continued, induces variety of convulsions or fixed spasms, either of the affected organ, or of the moving fibres in the other parts of the body.

A still greater quantity of stimulus, or longer continued, produces a paralysis of the organ, which may be either temporary or permanent.

A quantity of stimulus, less than natural, producing a decreased exertion of sensorial power, occasions an accumulation of the general quantity of it; and so when the application is made to a particular organ.

A quantity of stimulus, less than that mentioned above, and continued for some time, induces pain in the affected organ, as the pain of cold, and that of hunger.

A certain quantity of stimulus, less than natural, induces the moving organ into feebler, and more frequent contractions, as is observable in the tremors of the hands of people accustomed to vicious spirit, till they take their usual stimulus.

A certain

A certain quantity of stimulus, less than that above-mentioned, inverts the order of successive fibrous contractions, as in vomiting.

A certain quantity of stimulus, less than that above-mentioned, is succeeded by paralysis, first of the voluntary and sensitive motions, and afterwards of those of irritation and of association, which constitutes death.

The cure which nature has provided for the increased exertion of any part of the system, consists in the consequent expenditure of the sensorial power. The means of relief by art, where the exertion of the sensorial powers is much increased, as in the hot fits of fever or inflammation, are the following:—Decrease the irritations by blood-letting, and other evacuations; by cold water taken into the stomach, or injected as an enema, or used externally; by cold air breathed into the lungs, and diffused over the skin; by food of less stimulus than the patient has been accustomed to.

As a cold fit, or a paroxysm of inactivity of some parts of the system, generally precedes the hot fit, or paroxysm of exertion, by which the sensorial power becomes accumulated, this cold paroxysm should be prevented by stimulant medicines and diet, as wine, opium, bark, warmth, cheerfulness, surprize.

When

When the exertion is of a particular part, excite into greater action some other part of the system, by which means the spirit of animation may be in part expended, and thence the inordinate actions of the diseased part may be lessened.

Another mode of taking off increased exertion of the sensorial power, is by first increasing the general stimulation above its natural quantity, which may in some degree exhaust the spirit of animation, and then decrease the stimulation beneath its natural quantity.

For the cure of diseases arising from decreased exertion, as in cold fits of ague, hysterical complaint, and nervous fever, the following means are those commonly used. *First.* To increase the stimulation above its natural quantity for some weeks, till a new habit of more energetic contraction of the fibres is established. This is to be done by wine, opium, bark, steel, given at exact periods, and in appropriate quantities.—To these irritative stimuli, should be added, the sensitive ones of cheerful ideas, hope, affection. *Second.* By changing the kind of stimulus. A change of diet, drink, and stimulating medicines, is often advantageous in diseases of debility. *Third.* By stimulating the organs, whose motions are associated with the torpid parts of the system;

system; as blistering the skin in weakness of the stomach, indigestion, and heartburn. *Fourth.* By decreasing the stimulus for a time. By lessening the quantity of heat for a minute or two by going into the cold bath, a great accumulation of sensorial power is produced. *Fifth.* Decrease the stimulus for a time below the natural, and then increase it above natural. In many diseases this method is the most successful: hence the bark in agues produces more certain effect after the previous exhibition of emetics. In diseases attended with violent pains, opium has double the effect, if venesection and a cathartic have been previously used. On this seems to have been founded the successful practice of Sydenham, who used venesection and a cathartic in chlorosis, before the exhibition of the bark, steel, and opiates. *Sixth.* Prevent any unnecessary expenditure of sensorial power. Hence, in fevers attended with debility, a decumbent posture is preferred, with silence, little light, and such a quantity of heat, as may prevent any chilly sensation.

The longer in time and the greater in degree the quiescence or inertion of an organ has been, so that it still retains life or excitability, the less stimulus should at first be applied to it; as in people famished, or perishing with cold.

Whenever

Whenever the least degree of intoxication exists, a proportional debility is the consequence; but there is a golden rule by which the necessary and useful quantity of stimulus in fevers with debility, may be ascertained. When wine and beer are given either alone or diluted, if the pulse becomes slower, the stimulus is of a proper quantity; and should be repeated every two or three hours, or when the pulse becomes quicker.

In the chronical debility brought on by drinking spirituous liquors, there is another golden rule for directing the quantity of spirit that may be safely lessened, for there is no other means by which health can be restored. In patients of this description, one fourth part of the quantity they have lately been accustomed to should be omitted, and if in a fortnight their appetite increases, they should be advised to omit another fourth part; but if they perceive their digestion becomes impaired from the want of this quantity of spirituous potation, they are advised to continue as they are, and rather bear the ills they have, than risk the encounter of greater. At the same time, flesh meat, with or without spice, should be recommended, with bark and steel in small quantities between their meals, and half a grain or a grain of opium with five or eight grains of rhubarb at night.

For the numerous facts adduced in support of these doctrines, we must refer our readers to the work itself. We can give but the outline, and that, we fear, an imperfect one. The author goes on to apply his principles to the explanation of all the functions of animal life, and the phœnomena of vegetable animation.

The following are the author's observations on TEMPERAMENTS:—

" Ancient writers have spoken much of temperaments, but without sufficient precision. By temperament of the system should be meant a permanent predisposition to certain classes of diseases:—without this definition, a temporary predisposition to every distinct malady might be termed a temperament. There are four kinds of constitution, which permanently deviate from good health, and are perhaps sufficiently marked to be distinguished from each other, and constitute the temperaments or predispositions to the irritative, sensitive, voluntary, and associate classes of diseases.

" I. *The Temperament of decreased Irritability.*

" The diseases which are caused by irritation, most frequently originate from the defect of it; for those which are immediately owing to the

excess of it, as the hot fits of fever, are generally occasioned by an accumulation of sensorial power, in consequence of a previous defect of irritation, as in the preceding cold fits of fever. Whereas the diseases which are caused by sensation and volition, most frequently originate from the excess of those sensorial powers, as will be explained below.

" The temperament of decreased irritability appears from the following circumstances, which shew that the muscular fibres or organs of sense are liable to become torpid or quiescent from less defect of stimulation than is productive of torpor or quiescence in other constitutions.

" 1. The first is the weak pulse, which in some constitutions is at the same time quick. 2. The next most marked criterion of this temperament is the largeness of the aperture of the iris, or pupil of the eye; which has been reckoned by some a beautiful feature in the female countenance, as an indication of delicacy, but to an experienced observer it is an indication of debility, and is therefore a defect, not an excellence. The third most marked circumstance in this constitution is, that the extremities, as the hands and feet, or nose and ears, are liable to become cold and pale in situations in respect to warmth, where those of greater strength are not affected.

affected. Those of this temperament are subject to hysterical affections, nervous fevers, hydrocephalus, scrophula, and consumption, and to all other diseases of debility.

" Those who possess this kind of constitution, are popularly supposed to be more irritative than is natural, but are in reality less so. This mistake has arisen from their generally having a greater quickness of pulse, as explained in Sect. XII. i. 4. XII. 3. 3.; but this frequency of pulse is not necessary to the temperament, like the debility of it.

" Persons of this temperament are frequently found amongst the softer sex, and amongst narrow-shouldered men; who are said to bear labour worse, and pain better, than others.---This last circumstance is supposed to have prevented the natives of North-America from having been made slaves of by the Europeans. They are a narrow-shouldered race of people, and will rather expire under the lash, than be made to labour. ---Some nations of Asia have small hands, as may be seen by the handles of their scymetars; which, with their narrow shoulders, shew that they have not been accustomed to so great labour with their hands and arms, as the European nations in agriculture, and those on the coasts of Africa in swimming and rowing. Dr. Manning-

ham, a popular accoucheur in the beginning of this century, observes in his aphorisms, that broad-shouldered men procreate broad-shouldered children.—Now, as labour strengthens the muscles employed, and increases their bulk, it would seem that a few generations of labour or of indolence may in this respect change the form and temperament of the body.

“ On the contrary, those who are happily possessed of a greater degree of irritability, bear labour better than pain; and are strong, active, and ingenious. But there is not properly a temperament of increased irritability tending to disease, because an increased quantity of irritative motions generally induces an increase of pleasure or pain, as in intoxication, or inflammation: and then the new motions are the immediate consequences of increased sensation, not of increased irritation; which have hence been so perpetually confounded with each other.

“ II. *Temperament of Sensibility.*

“ There is not properly a temperament, or predisposition to disease, from decreased sensibility, since irritability and not sensibility is immediately necessary to bodily health. Hence it is the excess of sensation alone, as it is the defect of irritation, that most frequently produces disease. This temperament

perament of increased sensibility is known from the increased activity of all those motions of the organs of sense and muscles, which are exerted in consequence of pleasure or pain, as in the beginning of drunkenness, and in inflammatory fever. Hence those of this constitution are liable to inflammatory diseases, as hepatitis; and to that kind of consumption which is hereditary, and commences with slight repeated hæmoptoe. They have high-coloured lips, frequently dark hair, and dark eyes with large pupils, and are in that case subject to gutta serena. They are liable to enthusiasm, delirium, and reverie. In this last circumstance they are liable to start at the clapping of a door; because the more intent any one is on the passing current of his ideas, the greater surprise he experiences on their being dissevered by some external violence, as explained in Sect. XIX. on reverie.

" As in these constitutions more than the natural quantities of sensitive motions are produced by the increased quantity of sensation existing in the habit, it follows, that the irritative motions will be performed in some degree with less energy, owing to the great expenditure of sensorial power on the sensitive ones. Hence, those of this temperament do not attend to slight stimulations, as explained in Sect. XIX. But when a stimulus is so great as to excite sensation, it produces greater sensitive

sensitive actions of the system than in others; such as delirium or inflammation. Hence they are liable to be absent in company; sit or lie long in one posture; and in winter have the skin of their legs burnt into various colours by the fire. Hence also, they are fearful of pain; covet music and sleep; and delight in poetry and romance.

" As the motions in consequence of sensation are more than natural, it also happens from the greater expenditure of sensorial power on them, that the voluntary motions are less easily exerted. Hence the subjects of this temperament are indolent in respect to all voluntary exertions, whether of mind or body,

" A race of people of this description seems to have been found by the Spaniards in the islands of America, where they first landed, ten of whom are said not to have consumed more food than one Spaniard, nor to have been capable of more than one tenth of the exertion of a Spaniard.—*Robertson's History.*

" In a state similar to this the greatest part of the animal world pass their lives, between sleep or inactive reverie, except when they are excited by the call of hunger.

"III. The Temperament of increased Voluntariness."

" Those of this constitution differ from both the last-mentioned in this, that the pain, which gradually subsides in the first, and is productive of inflammation or delirium in the second, is in this succeeded by the exertions of the muscles or ideas, which are most frequently connected with volition; and they are thence subject to a locked jaw, convulsions, epilepsy, and mania, as explained in Sect. XXXVI. Those of this temperament attend to the slightest irritations or sensations, and immediately exert themselves to obtain or avoid the objects of them; they can at the same time bear cold and hunger better than others, of which Charles the Twelfth of Sweden was an instance. They are suited and generally prompted to all great exertions of genius or labour, as their desires are more extensive and more vehement, and their powers of attention and of labour greater. It is this facility of voluntary exertion, which distinguishes men from brutes, and which has made them lords of the creation.

"IV. The Temperament of increased Association."

" This constitution consists in the too great facility with which the fibrous motions acquire habits of association, and by which these associations become proportionably stronger than in those

those of the other temperaments. Those of this temperament are slow in voluntary exertions, or in those dependent on sensation, or in irritation.—Hence great memories have been said to be attended with less sense and less imagination, from Aristotle down to the present time; for by the word memory these writers only understood the unmeaning repetition of words or numbers in the order they were received, without any voluntary efforts of the mind.

In this temperament those associations of motions which are commonly termed sympathies, act with greater certainty and energy, as those between disturbed vision and the inversion of the motion of the stomach, as in sea-sickness; and the pains in the shoulder from hepatic inflammation. Add to this, that the catenated circles of actions are of greater extent than in other constitutions. Thus, if a strong vomit or cathartic be exhibited in this temperament, a smaller quantity will produce as great an effect, if it be given some weeks afterwards; whereas, in other temperaments, this is only to be expected, if it be exhibited in a few days after the first dose. Hence quartan agues are formed in those of this temperament, as explained in Section XXXII. on diseases from irritation; and other intermittents are liable to recur from slight causes many weeks after they have been cured by the bark.

"V. The first of these temperaments differs from the standard of health from defect, and the others from excess of sensorial power; but it sometimes happens that the same individual, from the changes introduced into his habit by the different seasons of the year, modes or periods of life, or by accidental diseases, passes from one of these temperaments to another. Thus, a long use of too much fermented liquor produces the temperament of increased sensibility, great indolence and solitude that of decreased irritability, and want of the necessaries of life that of increased voluntariness."

Dr. Darwin next applies his doctrines to the explanation of the phœnomena and cure of diseases. These he classes into diseases of irritation, diseases of sensation, diseases of volition, and diseases of association. For the detail we must refer our readers to the work, and we have no doubt they will receive as much satisfaction from the perusal as we readily acknowledge ourselves to have done. If the arguments adduced do not always produce conviction, they at least always exhibit proofs of ingenuity and attentive observation. The author promises a second volume in the course of the ensuing year.

XIV.

Observations Physiological and Chirurgical on Compound Fractures. By Walter Weldon, Surgeon, 8vo. p. 137. 2s. 6d. Crosby, London.

THE attempt to produce union of the soft parts in compound fractures by adhesive inflammation, and thus, as it were, converting compound into simple fractures, is not one of the least improvements that surgery has undergone within a few years past. Whenever the attempt can be made to succeed, much pain and tedious confinement will be saved to the patient; indeed, much of the danger of the disease will be averted.— When it is unsuccessful, no injury is the consequence; whilst, in whatever degree a union of parts by the first intention, can be effected, in that proportion will the patient, in all probability, be benefited.

It is the object of the present work, to point out the advantages that may be derived from this mode of treatment; the means that are most proper to be pursued, for the attainment of this end; and the best mode of avoiding the danger and inconveniences, attendant on this kind of accident.

Before

Before entering on the subject of compound fractures, the author offers some observations on the œconomy of the bones.

The living powers of the different parts of the human body, are, generally speaking, in proportion to their vascularity. Parts possessing less vascularity, are generally less susceptible of disease, but when diseased, are more difficult to manage. The bones are less vascular than most other parts; their living powers also are much weaker; the quantity of earth contained in them, renders them much firmer, and more resisting in their structure.

From these differences it is very generally found, that the bones are less susceptible of diseased actions than the softer parts; and when diseased, require more care and attention in the treatment.—All the actions, healthy and diseased, taking place in bones, are slower in their progress, than similar actions taking place in soft parts. And it is likewise found, that the diseased actions of bones are more liable to produce death in them, than those of the soft parts.

Bones, like the soft parts, are subject to inflammation and its consequences—pain, increased vascularity, and tumour;—but the progress of inflammation in them is slow. Its termination may

be, by resolution, suppuration, or mortification. If a large blood-vessel going to a bone is divided, the anastomosing branches are seldom capable of continuing the circulation complete; and as far as that ceases, the bone dies, and then exfoliates.

When a bone is fractured, without a wound in the soft part, adhesive inflammation takes place; but the process is slow. First, an effusion of coagulable lymph takes place from the fractured extremities. The vessels gradually elongate, and extend themselves through this coagulable lymph, till they meet, when they anastomose with each other; ossific matter is then deposited along their outsides, thus forming a substance, which is called callus.

This is the mode of union which generally takes place in simple fractures, and, sometimes, in compound fractures also:—it is by much the shortest, safest, and the most desirable.

When this mode of union does not take place, as in most cases of compound fractures, and, now and then, in simple fractures, in consequence of very great injury, or improper treatment; a very different process produces the reunion of the parts.

The coagulable lymph, which, in the former case, forms the medium of union, escapes. The inflammation

Inflammation rises to a higher degree, both in the bone and soft parts; and, in a few days, suppuration takes place.

In consequence of the destruction of some of the small arteries of the bone, a small portion of each of the broken extremities generally loses its life. Thus, becoming an extraneous body, it acts as a stimulus to the absorbents of the living bone, with which it is in contact. These gradually remove as much of the living bone as forms the line of union with the dead part, by which this is separated. This process is called exfoliation. Whilst it is going on, a part of the bony matter is absorbed from the broken extremities, as in simple fracture; then granulations form, and gradually extending from each extremity, meet and unite, the vessels inosculating one with another.

These granulations are very similar in appearance to those formed by the soft parts; but they are smaller, more regular, and rather paler:—when examined, they are found to be bony, excepting just on their surface. If in this state they are macerated, the eminences on the dried bone correspond exactly to those of the granulations, when fresh: so that it seems, the soft part of the bone is soon formed; but the bony deposit very soon succeeds.

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The two portions of bone being thus united, the formation of bony granulations ceases; the part becomes less vascular; and the bony deposit continuing, it becomes also mechanically stronger. In the mean time, the granulations formed by the soft parts, extend over those formed by the bone. The cicatrix then extending over the whole, the wound is healed.

With respect to the propriety of immediate amputation in cases of compound fracture, the author properly observes, that amputation is not, strictly speaking, a cure for compound fractures, but an apparently lesser evil, intended to remove a greater one. But amputation is in itself attended with considerable danger, and especially in vigorous and healthy subjects;—the propriety of immediately performing this, must depend, therefore, on a comparative estimate of the danger attending the operation, with that which might be expected to result from deferring the performance of it. The impossibility of ultimately saving a limb, is not of itself a sufficient reason for immediate amputation; for as this operation on persons in strong health, is attended with more danger than on those that have been reduced by previous irritation and evacuation; and as the operation may be delayed, often with a tolerable degree of safety to the patient, it follows, that it should only be immediately performed in those cases, which from some particular circum-

circumstances, are likely otherwise to prove immediately fatal.

The cases in which immediate amputation is proper, are those which are attended with profuse hæmorrhage, where the bleeding vessel is out of our reach; and those where, from the extensive laceration and destruction of parts, the consequent inflammation is likely to prove so violent as to destroy the patient. This is particularly the case where the injury extends into any of the large joints, as those of the knee and ankle.

Supposing that none of those circumstances occur, which render immediate amputation necessary, the object of the surgeon should be, to procure a reunion of the divided parts, with as little inflammation, and as speedily as possible. With this view, he should endeavour to unite the whole of the wound, or as much of it as possible; by adhesive inflammation. This is to be attempted by reducing the bones to their proper situation, and bringing, as much as possible, the wounded surfaces into close contact with each other, and retaining them in this situation, till they are united. Means should be used at the same time to moderate the violence of inflammation. Should the attempt to unite the parts by the first intention fail, still the treatment which ought to be followed in attempting

attempting it, is that which is most proper to lessen the subsequent inflammation, to prevent an excessive discharge of pus, and to forward the cure by granulations.

When suppuration has come on, and the inflammation been moderated, the more simple the local applications are, the better. Superficial dressings are in general all that is required. When the strength fails, from the quantity and continuance of the discharge, recourse must be had to tonic remedies and nourishing diet.

With respect to the position of the patient, it is of much consequence to attend to this, when the lower extremities are the parts injured. The body of the patient ought, if possible, to be placed in that situation which is easiest, in which all the muscles are most relaxed, and where the surface on which he rests is broadest; for in that situation he will be able to continue longest without moving, and will be less liable to move inadvertently.

In fractures of the leg and thigh, it has lately become a very general practice in this kingdom, to lay the patient on his side, that the limb may be placed in a relaxed position. But the author observes, that in most of the cases he has seen, this position soon became tiresome; and neither the patient

patient nor the limb continued long in the state they were first placed in. He recommends, therefore, that in general the patient should be laid on his back, and the limb raised so as to relax the muscles, by pillows placed under the ham. The best position for the leg is a horizontal one, with the knee raised by pillows as above.

The directions for the treatment in general, are judicious, but by no means the invention of this author. The plan is the one that has for some time been pursued in the London Hospitals, particularly at Guy's and St. Thomas's.

XV.

A Dissertation on Simple Fever, or on Fever consisting of one Paroxysm only. By G. Fordyce, M. D. F. R. S. &c. 8vo. p. 238. 3s. 6d. Johnson. London.

FROM the pen of so eminent a teacher and experienced a practitioner as Dr. Fordyce, much will naturally be expected. The present work affords ample proof of attentive observation and

accurate discernment. The theorist will find here nothing to employ his idle, and generally useless, speculations. It pretends only to describe appearances, such as nature exhibits, without an attempt to investigate her mode of acting. The present is undoubtedly a more elaborate and accurate history of simple fever, than has been hitherto given to the world.

The author observes in his introduction, that fever is a disease, the existence of which no man could have the least suspicion of, supposing him acquainted with the structure of the body, the properties of the solids and fluids, the various operations which go on in it in health, the manner in which they take place, the powers which produce them, the connection of the body and the mind, as well as those are known at this day to physiologists, anatomists, or those who have studied medicine itself, or any of the branches of knowledge conducive, or which have been thought conducive to it. It is therefore only to be known by observing it in the diseased bodies of men afflicted with the distemper.

Many are the authors who have described it, both ancient and modern. It may therefore be supposed, that the history of fever should have been rendered very perfect by this time, since it is one of the most frequent diseases, and has been in all ages,

ages, and in all countries, more especially as it is likewise one of the most fatal; and as it so occupies the whole system, as to absorb, during its continuance, all the faculties, both of the body and the mind, in a greater or less degree.

Every man, however, who has read the various descriptions of fever which have been given by authors, ancient or modern, of one country or of another, becomes immediately sensible, that neither its causes, rise, progress, or termination, are thoroughly known, or perfectly described, and of this he will be more fully persuaded, if he has frequently had occasion to see the disease.

The history of fever, therefore, is by no means thoroughly understood.—That its treatment is not understood thoroughly, appears clearly, as the practitioners of different countries, who attend patients in this disease, nay of the same country, town, or even district, although men of great learning in medicine, employ very different modes. This subject, therefore, is not exhausted. Many and many new observers, many and many new labourers in this field, must be employed to bring the whole knowledge and cultivation of it to perfection.

Since, as has been already said, nothing but the observation of the appearances which take

place in a person afflicted with fever, nothing but seeing the effects of medical instruments employed in the disease, can give mankind any idea, either of its history or treatment; nothing can give any man a power of improving the knowledge in this disease, either as to its history or cure, excepting having seen it frequently; and one not acquainted with the previous knowledge of it, which exists in the world, cannot tell whether he has made any improvement or no. What has gone before, as far as has been related, is open to every man, who will take the pains to read and give attention to what is written on the subject.

It is natural for a reader to enquire, Dr. Fordyce remarks, what opportunities of observation a man has had, who pretends to make some improvement, that he may not waste his time in perusing what contains nothing but dreams. To this it is answered, that besides all other opportunities of observing this disease, the author has been, for upwards of twenty years, one of the three physicians of St. Thomas's Hospital, whose walls have contained nearly four thousand patients every year, where the proportion of fevers to other diseases is much greater than the general proportion: as fevers, and indeed all acute diseases, give a preference in the admission of a patient, and many fevers originate in this, as well

as in all hospitals. His attention has been particularly drawn to this, and other diseases, by describing them, and pointing out the manner of their treatment to students in medicine, three times a year, for thirty years. No one, we believe, can entertain a doubt of Dr. Fordyce's sufficiency to the task he has undertaken.

Having premised thus much, the author enters on the subject of his work.

He observes, that fever has obtained its name in Greek, Latin, Arabic, and Persian, principally from the idea of heat: *pur*, in Greek, fire; *febris*, in Latin, from *fervere* to burn, &c.

It has been an idea that many practitioners in the art of healing have cherished, that in every disease, there is some appearance, which being present, the disease is present; being absent, the disease is absent. It is indeed, so flattering a prospect, and would render a knowledge of the disease so perfectly easy, that men who have considered themselves in the line of medicine, have constantly been extremely apt to give way to the delusion. It is as if, whenever a sailor approached an island, where there were chalk cliffs, he should immediately conclude them to be the snowy cliffs of Albion; or on the contrary, if he fell in with the columns of Stafa,

that

that he had fallen in with the Giants Causeway of Irene. There are few appearances that never take place, excepting in one particular disease; and still fewer particular diseases, which do not often take place without any one particular symptom. An inflammation, to give a strong instance, may take place in the pleura without pain, since not only adhesions have been found on dissection, but suppuration, both above and below the pleura, when the patient has never complained of any pain in the side,

Fever, of all diseases, is that one in which a pathognomonic symptom is least to be depended upon; that is to say, an appearance which does not take place when there is no fever, or a fever does not take place, when there is no such appearance.

Heat, the author observes, is certainly not a pathognomonic symptom of fever; that is, when measured by the thermometer, for the feelings of the patient cannot be depended upon. By the application of this instrument to the bodies of patients afflicted with fever, the author has often found the heat less than that which was found in the bodies of men in perfect health, although all the other appearances which constituted fever were present.

Cold

Cold cannot be deemed a pathognomonic symptom of this disease, for in some cases of fever, the author has measured the heat of the body at the first approach of an attack, and very frequently throughout the disease, without ever finding a greater degree of cold, than the heat natural to the body, from the first beginning to the final end of the disease.

If frequency of the pulse be considered as a pathognomonic symptom of fever, then spasmodic contraction of the intestines, the effects of violent exercise, of the passions of the mind, and a hundred other cases, must be called fever. The pulsation of the arteries may be numerous, without fever being present; and less numerous than they are naturally, even in the worst case of fever.

If we examine the restlessness, anxiety, state of the tongue, head-ach, or any other of the symptoms which often take place in fever, we shall find, that they also may be present when there is no fever, and absent in a patient afflicted with this disease. There is therefore no such thing as a pathognomonic symptom of fever.

Many diseases have been called fever, even by practitioners of great knowledge and observation, which the author does not mean to include.

clude in the number of fevers. In the first place, he excludes all affections of the system which depend upon any other diseases. Thus, the symptoms which arise in phlegmonous inflammation, as in pleurisy, in inflammation of the intestines, in erysipelas, in dysentery, in gangrene and mortification, in rheumatism, in tetanus, and many other diseases, are not considered as fever. Not that a fever cannot exist along with any other disease. A fever may begin first, continue for some time, and another disease may arise afterwards, without carrying off the fever; it may continue along with it; the going off of the second disease may not carry off the fever; but the other disease being carried off, all the symptoms of fever may still remain, and it may go through its course. Sometimes it happens, that another disease, arising in fever, cures the fever, and all the appearances which continue afterwards are entirely produced, or kept up by this second disease, the fever having entirely left the body.

A fever is a disease which affects the whole system; it affects the head, the trunk of the body, the extremities; it affects the circulation, the absorption and nervous system; it affects the skin, muscular fibres, the membranes; it affects the body, and affects likewise the mind. It is therefore a disease of the whole system, in every kind

kind of sense ; but it does not affect the various parts of the system uniformly and equally.

Fevers take up different times in their natural duration ; sometimes they go through the whole of their natural course in eight, ten, or twelve hours, and the disease terminates. The author has seen several fevers in which all the essential appearances took place, and terminated in the time above-mentioned. This he calls simple fever, and is what he describes in the present essay ; leaving all the varieties which occur, for the subject of another treatise.

A fever frequently begins with very marked symptoms all at once. According to Dr. Fordyce's observation, at least ten fevers take place between eight in the morning and eight in the evening, for one that takes place between eight in the evening and eight in the morning. The first appearance which generally takes place, is uneasiness and restlessness ; with these arise an actual inability of exerting the muscular powers, or performing any of the functions of the body, or faculties of the mind. This inability, which is common to both the mind and body, has been called weakness or debility. It appears to the author that it ought rather to be called depression of strength ; it is not that the powers of the body are lost, but they are prevented from act-

ing by the disease. Along with these it frequently happens, that the patient feels a sense of cold, the same kind of sensation that he feels, when surrounded by a colder medium than he is used to; this feel, as well the actual degree of cold, is very unequal in different parts of the body. A diminution of sensation also takes place. In the attack of fever such a degree of insensibility, with a feel of coldness, has in many cases taken place, that even hot substances have been applied in such manner, as to coagulate, nay, perform the chemical analysis of the part, without any sensation of heat having arisen in the mind ; and so of the other senses.

At the beginning of the attack of a simple fever, sometimes as the very first symptom, a pain arises in the small of the back: it is rather a sense of uneasiness than acute pain. The cause of this is not at all known. Diminution of secretion takes place in every part of the body; and as they continue diminished when the next stage of the disease, or hot fit comes on, it is probably to be attributed to contraction of the small vessels, and not to the weakness simply. The tongue becomes covered with a crust, which is sometimes white, sometimes verging towards brown. Horripilatio, or a sensation of some light body moving over the hairs of the skin, takes place. The colour of the skin changes often at

the

the very beginning of the attack. It acquires a dirty yellow look ; which is owing to the blood not passing freely through the external capillary vessels. At the same time the skin is contracted in wrinkles, and applied closely to the muscles, and other parts of the body. The eye is less brilliant than in health.

The pulse generally becomes more frequent than natural, and along with this frequency there is a peculiar state of it, which has generally been called hardness, but which differs from it in this respect, that it is not productive of a siziness in the blood, which hardness of the pulse always produces. Instead of hardness, therefore, Dr. Fordyce calls it obstruction, and he thinks he can determine the difference between these sensations perfectly ; but he gives no explanation to enable his readers to make the distinction.

Pain in the head takes place, generally in the forehead ; and a somewhat similar pain or uneasiness is felt throughout the body. Delirium is a symptom which arises frequently in fever ; and oppression is felt about the præcordia. Loss of appetite, nausea, and sometimes vomiting, occur. The contraction of the capillaries, which takes place in fever, and which has been called spasm, Dr. Fordyce does not consider as the essential part of fever, but that it is produced by

the fever, continues as long as the fever which is its cause, and goes off when it is removed.

Having proceeded thus far with the history of fever, our author treats of its causes, leaving the subsequent stages of the disease to be spoken of afterwards. The first cause of fever taken notice of is infection. A peculiar matter is generated in the body of a man in fever, which is carried by the atmosphere, and being applied to some part of the body of a person in health, causes fever to take place in him. This infectious matter is produced, the author says, by all fevers whatever. Infectious matter is produced too, by a number of men living in a small space. Likewise the vapour or other matter, which arises from putrifying bodies, either animal or vegetable, being applied to a person in health, occasions fever.

Infectious vapours produced in these ways occasion fever simply, which often goes through its course without any disease happening afterwards. But there are other infectious matters which necessarily give occasion to another disease after the fever has taken place. These are, variolous matter; the infectious matter of the measles; of the chicken pox; swine pox, &c. Another kind of infection which produces fever is that which produces the plague in Syria. It would

would appear that infectious matter's are capable of chemical combination with the vapours that constitute the atmosphere, and by this means lose their properties; if it were not so, those infections would soon spread desolation over the whole earth. How far a quantity of infectious matter can be carried, without being combined with some of the vapours constituting the atmosphere, is not known; certainly not to a great distance.

The next cause producing fever, is sudden exposure to cold. Of this the author has seen many instances. Moisture is another cause of fever, according to our author. Whether this operates by producing cold, he leaves to be determined by future experiment and discussion.

Another cause of fever is, eating certain food. This is most observable in people recovering from fever, in whom relapses have frequently taken place from this cause. A sudden excitement of any of the passions of the mind, attended with great anxiety, has been immediately followed in some cases with fever. But it is possible that some of the other causes of fever may have been present at the same time. This cause, therefore, is doubtful.

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The state of the fluids, that is, the properties of the different species of fluids contained in the body, or their proportion, have been stated by many authors as the causes of fever; such as their viscidity or thinness; their acrimony or mildness; their different proportions to one another, putrescency, &c. But these causes Dr. Fordyce entirely rejects, as not at all supported by experiment. He offers no opinion whether the causes of fever are capable of co-operating with one another.

Dr. Fordyce is clearly of opinion, (and the observation, as far as we know, originated with himself) that a fever once produced, will go on, although its cause be entirely removed. Another observation he makes, is, that the continued or fresh application of a cause of fever, neither will increase the fever already produced, nor occasion a new one.

The author next returns to the history and progress of the disease.

The first attack of fever may be fatal, in the first, or any subsequent paroxysm. When the first attack of fever has been fatal, it has been classed among sudden deaths; and all of these have been called very erroneously apoplexy or syncope. When the attack is fatal, it sometimes kills

kills in five minutes, sometimes it requires half an hour, seldom longer than that time. Violent head-ach, with great sense of chillness, takes place ; the extremities become very cold, and perfectly insensible ; there is great prostration of strength, so that the patient is incapable of supporting himself in an erect posture ; he becomes pale, his skin of a dirty brown ; insensible to external objects ; the eyes are half open, the cornea somewhat contracted ; the pulse is diminished, sometimes with excessive frequency ; all the appearances of life gradually subside, and he is carried off.

It is rare, however, that the first attack of fever is fatal. After the appearances described above in the cold stage, horror and rigor commonly succeed, and when these take place, it has been remarked by Dr. Cullen, and confirmed by our author, that the patient is never carried off by the accession of that paroxysm. The pulsations of the heart and arteries increase as the hot fit comes on, to 100 or more strokes in a minute ; and with this a greater degree of heat takes place, which has never been found by Dr. Fordyce to exceed 105 of Fahrenheit's scale. The circulation, therefore, is universally increased, although unequally ; but many of the small vessels remain contracted, as may be gathered from the exterior parts, although they have a degree of redness,

redness, still retaining that dirty reddish brown, from the contracted state of the secretory organs, and thence the diminution of the secretions which still continues ; and the dryness of the skin and tongue. The thirst is greatly augmented in the second stage ; the restlessness is also much increased, and it is probable this may arise from the distention of the small vessels. Delirium sometimes arises in the second stage of fever, and is probably owing to compression of the brain, by the quantity of blood thrown on it, by the increased action of the heart. This delirium, if unaccompanied with hardness of the pulse, by no means retards the crisis. But if hardness of the pulse should take place, it often converts the disease into a compound fever.

Most commonly in simple fevers, the first stage does not continue above two hours ; the second stage, or hot fit, rarely continues afterwards for more than two or three hours before the crisis begins to take place ; though the hot fit may continue for a much longer time, as two or even three days, without any fresh exacerbation ; but this is very rare.

The first manner in which a simple fever terminates, has been called a crisis. The hot fit having continued a certain time, is apparently the occasion of this, either by means of the increased

creased action of the heart and arteries; some affection of the stomach; or both taken together; or, perhaps, by some other operation which has not yet been discovered. The first appearance observed is, the relaxation of the skin, in consequence of which sweating takes place; and the skin returns to its natural colour. There is not the least ground from experiment, to suppose that any peculiar matter is thrown off during the sweating, which could cause the disease. The urine is commonly secreted in larger quantity, which after standing some time, becomes turbid, and flaky chrystals are deposited of a dirty red colour. The appearance of this is of great importance in determining the crisis, as if this were wanting, the author would hardly hesitate to say, that it was not a paroxysm of simple fever, but that the fever would be repeated.

The mouth and tongue, which were dry in the attack, become moist during the crisis, and the tongue becomes clean. Every other secretion returns to its natural state. The quickness of the pulse, pain in the head, and all the other symptoms gradually subside, and the whole system returns to its natural state, leaving perhaps some degree of weakness behind. If there be any head-ach, languor, pain in the small of the back, or any other slight symptom remaining, the fever will recur, and is not a simple fever.

A simple fever may be terminated in other ways than by crisis, but then the patient is not freed from disease, so as to return to his healthy state.

All fevers, according to the author's observation, are either the disease which has been described, or repetitions of it modified in a great variety of ways, and every enquiry into the history of the disease, must be founded upon a knowledge of simple fever.—In a future dissertation, the author proposes to point out the manner in which simple fever is repeated, with various modifications, so as to form all the varieties of the disease.

XVI.

An Inquiry into the Medical Efficacy of a new Species of Peruvian Bark, lately imported into this Country, under the name of YELLOW BARK. By J. Relph, M. D. Physician to Guy's Hospital. 8vo. p. 177. 3s. Phillips, London.

DR. RELPH sets out with giving a tolerably full account of the natural history of Cinchona or Peruvian Bark, extracted from the various

sious authors, who have written on this subject. From this, it appears, that there are various species of the tree affording this bark; the qualities of which, therefore, may be expected to differ considerably. That they do so differ, in their sensible qualities, is very evident; whether their medical effects correspond with this difference, is not altogether so certain. It is hazardous to infer medical properties from pharmaceutical. Actual experiment is the only sure guide in these matters.

From the varieties of this bark which have, from time to time, been introduced, our author conceives it not improbable, that some species of Cinchona may yet be discovered, of more advantage to medicine than any which has hitherto been employed.—“I have been led to this consideration,” says he, “from lately using a species of Peruvian bark, which, till within the course of the last year, has been unknown in this country, and which promises, by the trials made with it, to surpass in efficacy, all the others now used for the purposes of medicine.”

This is now known in London by the name of Yellow Bark; but from the description of it which follows, it will appear to be different from the yellow kind noticed by Arrot and Condamine, or indeed of any other author except

Murray, who has described a “Cortex Chinæ, vel Chinchinæ Regius, seu Cortex Chinæ Flavus,” with which it seems to agree, both in its external and medical characters.

Of this Royal Yellow Quinquina, Professor Murray gives the following account. (Vide Murray Appar. Medicam. vol. 6.)

“ This bark not long ago was brought from London, under the foregoing name. Of what country it is a native I know not. But in the month of June, 1790, when I was at Frankfort on the Main, I saw specimens of it with Mr. Salzwedel, an experienced apothecary, who favoured me with one of them. I saw it afterwards in an apothecary’s shop at Wisbad; it bore then a high price, a pound of it being sold for sixteen dollars by Messrs. Ettlings, druggists at Frankfort. This bark consists of flattish pieces, of about the length of a finger, the breadth of a thumb, and a line in thickness. Its colour is yellowish, inclining to that of the rust of iron. It partakes more of the ferruginous colour on its external, than on its internal surface, owing to the close adhesion of the epidermis to the bark. Both in its fracture and on the surface, it appears fibrillous, breaking so easily between the fingers, that it may be rubbed into a yellow powder. Its taste is intensely bitter, with a slight degree of astringency. Its efficacy,

ficacy, by certain of the Frankfort physicians, is considered, as very far superior in intermittent fevers, to the bark commonly employed. I have no doubt of this bark being the same with that lately sent me by the celebrated L. B. Ab Asch, under the name of the *Cortex Chinæ Flavus*, though it seemed to me somewhat more ponderous and compact, but resembled it in appearance, and not inferior to it in bitterness. It will be the means of avoiding confusion, if, in future, this bark should be denominated the royal yellow bark; for lately, at Amsterdam, some bark was sold under that appellation, for fourteen florins a pound; which, from the specimens I have seen, appeared to me, to resemble in every respect, the red Peruvian bark, but of a somewhat paler red. Dr. Thuessink, in a letter to Professor Blumenbach, (dated the twenty-fifth of August, 1790) has said, that it is called royal bark, because it was intended for the use of the Royal Family of Spain; and he was satisfied, from his own experience, that it very far excelled the common Peruvian bark in efficacy. Its colour is not properly yellow, but more nearly resembling that of the rust of iron.

“ Monsieur Condamine, and Joseph de Jussieu, have made mention of a bark found in the kingdom of Peru, of a yellow colour; and Mr. Arrot has noticed a yellowish bark; but we cannot, from their

their descriptions, find out characters which agree with those above.

" This bark, though denominated yellow, is only to be understood, as approaching nearer to that colour, than any other species of Peruvian bark imported into this country, especially when reduced to powder. It consists of flattish irregular pieces, of a cinnamon colour, inclining to red, and having in certain directions of the light, a peculiar sparkling appearance on the surface. They are very generally divested of the cuticle, of a fibrous texture, dry, and rigid to the feel, and easily rubbed into powder between the fingers and thumb ; neither remarkably weighty nor the contrary. They have little odour, but to the taste manifest intense bitterness, with a moderate share of astringency, together with a certain flavour corresponding unequivocally to those of the *Cinchona officinalis*. The external surface of this bark, is of a somewhat deeper colour than that of the internal, and in some specimens it is as deep as that of the red bark. The pieces vary much in size; some are about two inches and a half in length, an inch in breadth, and the sixth of an inch in thickness ; while others are still smaller, and some are to be found from twelve to eighteen inches in length, with the breadth and thickness in proportion. I have also seen whole chests of this bark, the pieces of which were nearly cylindrical, and

as

as completely covered with outer coat, as the most perfect specimens of common bark. The epidermis of the large pieces of the yellow bark is of a reddish brown colour, rough, and of a somewhat spongy texture; but that of the smaller pieces is of a grey colour, harder, and much more compact.

" On comparing this description of the yellow bark with that given by Professor Murray, of the *Cortex Chinæ*, their similitude becomes sufficiently obvious to determine me to conclude, that they are of the same species. Their external resemblance, and the qualities they manifest to the organs of taste, tend mutually to confirm this opinion; though, from not possessing any specimens of the *Cortex Chinæ*, it is impossible that the identity of these barks can be absolutely ascertained.

" From the accounts of Arrot, Condamine, and Jussieu, it is manifest, that the goodness of the different species of Peruvian bark was found to be always in proportion to the deepness of its colour: thus the red was most valued, and the virtues of the white, pale, and yellow yielded successively to each other. But admitting this observation to its utmost extent, the yellow bark should now be preferred to any other which has lately been imported into Europe; for the true red bark, so fully described and recommended by my learned

learned friend, Dr. Saunders, has all been consumed some time ago, and notwithstanding the increased demand for this species, the drug merchants found it impossible to procure of it a second importation of the same quality; and though much bark is still sold under this name, yet, upon examination, it is found evidently inferior to the original red bark. Besides, the bark to which I here call the attention of practitioners, though named yellow, is in reality of a deep or dull orange colour, approaching nearly to the rust of iron, and on being a few days exposed to the light, acquires a still darker colour than the red bark; therefore, so far as colour may be deemed a test of comparative superiority in the goodness of the Peruvian bark, this species has still a claim to superior excellence."

Having thus given the external characters of this bark, Dr. Relph proceeds to point out its properties, as the subject of pharmaceutical experiments. The experiments for this purpose, were projected and conducted by Mr. Babington, of Guy's hospital.

From these experiments it appears, that the yellow bark possesses, as far as its sensible qualities can enable us to judge, superior powers to most other species of bark hitherto known. It is bitterer to the taste, and more astringent than the other sorts. The decoction and infusion

were

were found also less liable to undergo fermentation.

With regard to the medical effects of this new species of bark, our author observes, that from the general and successful experience, which he has had with it, in many inveterate agues, it will seldom, if ever, be found necessary in such cases, to employ any other febrifuge. He has the authority, likewise, of Drs. Saunders and Hervey, the other physicians of the hospital, to say, that in the various cases in which this drug was used by them, it proved invariably successful. Half a drachm of the yellow bark in powder, given every two hours, has, in general, been found sufficient for the cure of intermittents; hence Dr. Relph supposes it to possess nearly a double febrifuge power to that of the common bark. The different preparations of this medicine possess, according to the author, nearly as much efficacy as the bark in substance.

The latter part of the work contains the testimonies of several practitioners in favour of the yellow bark; amongst whom we observe Dr. Woodville, the author of "Medical Botany," and Dr. Lind, of Haslar hospital.

XVII.

ESSAYS PHYSIOLOGICAL and PRACTICAL ; founded on the modern Chemistry of LAVOISIER, FOURCROY, &c. with a View to the Improvement of the Practice of Physic. By Francis Penrose, M. D. 8vo. p. 158. 3s. Deighton, London.

WE have not been able to discover the connection between the modern theory of chemistry, and the improvement in the practice of physic, which the author advertises to in the title of his book. The work is indeed divided into two parts ; the first giving a brief outline of the new doctrines of the French chemists ; the other treating of the properties of life, and of diseases in general, but with no real kind of relation to each other, that we can discern.

We forbear at present to enter into any examination of the chemical part of the work, as we shall probably, on some future occasion, have to speak fully on this subject, in our account of some works that treat of the new chemistry, in a more clear and comprehensive style than the author of the work before us. The remainder of

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the book, which treats of the properties of life, and of diseases, is drawn up in so inaccurate, and frequently unintelligible a manner, that we believe very few readers will have patience to wade through it. Not that the author introduces any new doctrines, though he speaks so little of his authorities, that it would appear at first view, as if he wished to pass off a well known doctrine (that of the late Dr. Brown) for his own. In many instances, he has evidently misunderstood and misrepresented the doctrine of Dr. Brown. This itself is, by far, too loosely and inaccurately laid down, to be useful to practitioners in general. We have always been of opinion, that it points out many principles, which had not occurred to previous writers, and which tend materially to benefit the practice of physic. At the same time, we must own, that without sufficient and full explanation, it is a doctrine which is calculated to mislead young and inexperienced practitioners, and which, as far as it has yet gone, has, in our judgment, been productive of very great errors in practice.

Speaking of life and health, the author says:—
 “ Animal life appears to be generated from the vital air forcing itself into the lungs. Before the child was born, and the vital air admitted, the circulation of the blood of the child, was carried on, together with that of the mother’s: before that,

it was a member belonging to the mother, and supported by her, as regularly as any other member; but as soon as the air had forced itself into the lungs, and expanded them, it became a complete animal, and able to be supported by meat, drink, and air, independent of the mother." — Thus, the author is of opinion, that the cause of life is the admission of vital air into the lungs. The *fœtus* of course does not live till after the birth. That the circulation of the child is carried on together with that of the mother, is also a discovery of the author.

His mode of accounting for the contraction of the left ventricle of the heart is not less curious. " Having described the power of the heart, we shall now proceed to relate the manner in which the circulation of the blood is carried on; which narrative was brought on, from the taking the food into the stomach, to meeting of the chyle and oxygen in the lungs; from which mixture, it has been observed, a combustion comes on, which produces an expansion, heat, and colour to the blood. Hence, by this expansion, the blood is forced into the left auricle and ventricle of the heart, and continues to flow, till it has filled the heart to such a degree, as by its stimulus it compels the fibres thereof to re-act and to contract, and thereby to force it into the aorta, which muscular coat re-acts on the blood in the same manner as the heat." —

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The *vis à tergo*, and the contraction of veins are thrown out of the question. An expansion takes place in the small vessels of the lungs; that is, the blood returning from all parts of the body in a cold state, and therefore diminished in its volume, by the combustion which takes place in the lungs becomes heated, and in consequence expanded, and hence must rush *quâ datâ portâ*, to wit, towards the left side of the heart. This is indeed applying the new theory of chemistry! We may soon expect to see all the functions of the body explained in the same manner.

That the author does not understand the Bruno-nian doctrines, which form the basis of his book, will appear, we believe, from the following passages:—

P. 71. "The irritable fibre is in a ratio, compounded of the degree of its irritability, and the tone of the stimulus." We would ask the author what is the meaning of this passage?—Again, p. 56. "All the diseases attending the human constitution, may be reduced to two genera, viz., hot and cold. The first of these diseases is occasioned by too great a quantity of caloric or stimuli, and is denominated *sthenic* or *phlogistic*, and occasions an *exhaustion* of the oxygen or irritability." We should have mentioned, that the first principles of all nature, are distinguished into two
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by our author: oxygen or irritability, and caloric or stimulus; by the operation of this on the former, life is produced.—“The second genus of diseases proceeds on the contrary, from a want of heat or stimuli, and is called *asthenic*. Hence the oxygen, or irritable principle, accumulates in the fibre, and brings on a state of accumulation, from which proceeds debility.”—Speaking of stimuli, p. 111, he says, “as the above effect is occasioned by the *positive* stimuli, in like manner the *negative* stimuli has as violent effects; thus, some of the most terrible poisons must be ranked under this class. The oxygen which combines with the organized fibres, when it comes in contact with these poisons, renders it so extremely irritable, that the weakest stimulus is capable of producing death.”—Dr. Brown divided diseases into two genera, sthenic and asthenic; by the former, he meant those in which the excitement, or general vigour of the system, was preternaturally increased. When our author speaks of sthenic diseases, he always means diseases of exhausted irritability, which constitute one species of asthenic diathesis, or indirect debility.—One more extract, and we have done. “If the excitability which proceeds from oxygen, is exhausted before the disease is cured, the remaining hydrogen and azot, brings on a putrid state in the fluids of the body, for want of oxygen. If this putrid state is not observed soon enough, or not corrected by acids, the destruction

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of the frame must follow. Oxygen, according to the present doctrine of chemistry, having been proved to be the basis of all acidity, may it not follow, that acids in fevers are of service, by furnishing a supply of oxygen to the system, and thereby correct the tendency to putridity?"

Here we have another theory of fever, which perhaps is as true as all the others that have preceded it.

We have not hesitated to give our opinion very freely on the treatise before us; in hopes it may, in some degree, render the junior part of the profession cautious in their adoption of the Brunonian system of medicine. The indiscriminate and unguarded manner in which it has been taken up by young men, unprepared by an adequate previous knowledge of the laws of the human œconomy, and of the nature of the instruments of medicine, has, we are persuaded, been the source of most destructive errors in practice. The fundamental principles of the system we believe to be true, but very great caution is requisite in its application to the practice of medicine.

XVIII.

HISTOIRE EN GEDENSCHRIFTEN, &c. i. e. *History and Memoirs of the Society for restoring Drowned Persons, instituted at Amsterdam, Anno 1767.*

THIS work consists of four volumes, containing an account of the first establishment of the Society for the recovery of drowned persons, at Amsterdam, in the year 1767, with the memoirs of the society brought down to the present time 1793. The memoirs have been published at different times, and contain an account of prize questions offered by the society, and of the answers that have been received, with a view of ascertaining the best method of treatment, in cases of suspended animation from drowning, an accident very frequently occurring, throughout the United Provinces, owing to the numerous canals with which that country is intersected. A great number of cases are related, where life has been restored, by the means pointed out by the society.

We cannot help remarking, that the success of the attempts has been nearly equal, although very different modes have been pursued. At the first

first institution of the society, the treatment, recommended by them, consisted chiefly in restoring warmth to the body; in blood-letting; and in injecting of the fumes of tobacco into the intestines. At present, the two last are very generally considered as pernicious. Yet, it appears from the work before us, that recoveries did take place where these were adopted, and that too, as far as we can judge, in as great a proportion, as by the present methods. Does not this seem to shew, that a great deal of useless speculation has been employed on the subject? Indeed we are inclined to be of opinion, that very ordinary means, such as would naturally occur to any thinking person, whether of the faculty or not, and such as were in use, long before any establishments of this kind were set on foot, are commonly all that is necessary. These are, frictions, with warmth, and stimulating the nose and fauces. There is reason to believe, that cases which admit of relief, may be relieved by these means. It may, therefore, very naturally be questioned, whether the number restored, in consequence of the exertions of these societies, compared with those that would have otherwise have recovered, by the common attempts, be at all considerable. Certainly they bear no proportion to what one might be led to suppose, from the accounts published in their transactions. Some cases are re-

lated in the work before us, where recoveries have ensued, after long immersion ; for example, an hour or two ; but we trust no one at present can give credit to such stories. A very few minutes of entire submersion, perhaps ten at most, are sufficient to destroy life irrecoverably. Such, at least, is the case with animals ; and we have no reason to suppose the human body more tenacious of life than these, nor do we know of any clear indubitable cases which contradict this opinion.

XIX.

LOEFFLER, &c. *Beytrage zur Arzney - Wissenschaft, &c.* i. e. *Observations in Medicine and Surgery.* By Adolphus Frederick Loeffler, M. D. Physician to her Imperial Majesty of Russia. Leipzig.

MONS. LOEFFLER some time ago published a volume of observations which was very favourably received. The present commences with remarks on the inoculation of the plague ! It does not appear that the practice would be beneficial, as in the first place, it is not ascertained that every one must go through the disease ;

disease; and in the second, it is not certain that a person who has had the plague, is not again liable to be affected with it.

History of the Biliose Catarrhal Epidemic, which reigned at Petersburg in the years 1787 and 1788.

On the Asphyxia of Infants newly born, and of the treatment.—The apparent cessation of life in new born infants may be owing to various causes. The first noticed, is universal weakness of the vital powers. In this case we must be cautious not to suffer any effusion of blood from the umbilical cord. The best way is to keep up the communication of the child with the mother as long as possible, by avoiding any violent pulling of the cord, that the placenta may not be too soon detached; for the same reason no ligature should be early applied. The throat and nose should be irritated; and frictions of the breast, head, &c. with spiritous applications. Collection of glairy matter in the vesicles of the lungs, is another cause of this affection. The author has seen many cases, where the mouth of the infant was so filled with glairy matter, that it rendered the respiration difficult, sonorous, and rattling. This should be removed as well as it can be done, and then endeavour to re-animate the infant. The best method of doing this, is

by inflating the lungs, pressing out the air afterwards; and in this way imitating in some degree, the natural respiration. Congestion of blood in the lungs, is said to be another cause of apparent death in infants; this may arise from the neck of the child being tightly encircled by the os uteri, or navel string, or from the head being long detained in the passage; the proper remedy for this is to suffer a small quantity of blood to be lost, from the end of the divided cord.

Suppuration in the urinary bladder.—As corroborants were ineffectual, M. Loeffler determined to try injections. But as it is exceedingly difficult to throw fluids into the bladder by the urethra, he resolved to plunge a trochar through the rectum into the bladder, and to make his injections by that way, letting the canula remain in. The success answered his expectations. He injected three times a day, a decoction of willow. But in a short time tenesmus came on, which was so distressing as to oblige him to remove the canula; but, previous to withdrawing it, he tied a piece of soft sponge, about half an inch in bigness, to the extremity of a silver thread: he introduced this piece of sponge through the canula, the diameter of which was rather less than a quarter of an inch into the bladder, when the canula was withdrawn. The sponge being more voluminous than the opening in the bladder, it remained

remained behind, and the silver thread caused no inconvenience. As often as he wished to repeat the injections, he slid the canula on the thread, which served for a conductor into the bladder, and withdrew the sponge, and then injected. He repeated this six times without any difficulty, till the patient was perfectly cured.

Notwithstanding the success of our author, we are of opinion that this operation will not often be repeated. For in the first place, the perforation through the rectum is an operation of too much consequence to be performed on slight grounds; and the chance of curing a disease of this kind, by injections, is, we apprehend, very doubtful. We do not conceive, also, that other practitioners would find so little difficulty in repeatedly withdrawing and introducing the canula, as Mr. Loeffler seems to have experienced.

Perforation of the bladder through the vagina.—This was a case of suppression of urine, where a catheter or bougie could not be introduced through the urethra, cured by this operation.

Wound of an intercostal artery.—This artery is sometimes wounded in the operation for the empyema, whatever precaution is taken to avoid it; owing to its sometimes passing considerably below,

below the edge of the rib. When this happens, we are advised to make a second incision, about an inch nearer the spine than the former, and to give it such a direction as to enable us to get at the intercostal artery; but care must be taken to avoid opening the pleura. The artery being divided at this part, the hæmorrhage will cease at the anterior wound, and by compression on the posterior opening, we may be assured whether the bleeding be stopped or not, because the pleura not being wounded, the blood cannot escape into the cavity of the chest.

Cure of deafness.—This affection came on after an acute fever. All other remedies having proved ineffectual, the author determined to perforate the mastoid process. The patient heard better, as soon as the opening was made; but when it was again closed, he became as deaf as before. It occurred to the author to make another opening, and keep it open. For this purpose he introduced a piece of catgut, and let it remain till the edges of the opening became callous. Since that time the patient continues to hear distinctly.

Of the utility of artificial ulcers.—A man having been for some time affected with wandering rheumatic pains, was at length seized with a painful swelling of the right testicle, without inflammation.

flammation: after having in vain, had recourse to all kinds of remedies, an issue was made in the groin of the affected side, and in about ten weeks the swelling was gone. M. Loeffler took the idea from his observation of hernia humoralis, arising from a suppressed gonorrhœa, generally disappearing when a bubo arises in the groin and proceeds to suppuration.

A child of ten years of age had a hard tumour under the chin, which occasioned a difficulty of speaking and swallowing: an issue being made in the middle of the tumour, dispersed it in the space of two months.

A woman had a tumour in her breast as large as the fist, arising from external injury, and in which, at times, she experienced lancinating pains. The author caused an issue to be made on the part, and in about twelve weeks the hardness disappeared.

A woman after suffering much from anxiety, was attacked with a violent pain in the head, situated on the parietal bones. The external parts were swelled and inflamed. Leeches, blisters, and fomentations, were employed without effect. An issue on the part removed the pain in about six weeks.

On the bite of a mad dog.—The remedy proposed by M. Mederer, and which consists of a solution of thirty grains of the lapis septicus in a pint of water, does not appear to M. Loeffler, to be a specific against the hydrophobic virus; he is even persuaded, that the effects it sometimes produces, are not at all certain. The solution is too weak, to expect any remarkable effect from the caustic, and he believes the success it has had, is to be attributed to the frequent lotions, which wash off the virus. M. Loeffler has seen many persons, who have washed the part bitten with vinegar and urine, and who have escaped the disease. It is impossible, however, to be certainly safe;—we are not to imagine that there is nothing to fear, because the wounds have been washed. The appearance of hydrophobia must always be a very uncertain event.

On the Cæsarean operation, and on the section of the symphisis pubis.—It is so rare for the Cæsarean operation to succeed, that it may be regarded as attended with the most extreme danger. It is no wonder, therefore, that the proposition of dividing the symphisis pubis should meet with a very favourable reception. It was hoped, that by this means, the Cæsarean operation would be in all cases rendered unnecessary. The section of the pubis is not in itself attended with dangerous symptoms.

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This operation, however, is not unattended with difficulties: it is possible that the sacro-iliac ligaments may be ruptured, especially if the separation of the ossa pubis is hastily attempted; though there is no positive proof that this accident has ever actually happened. The author has performed this operation on six dead subjects, and in no one of these were those ligaments torn; on the contrary, they yielded to distension. In separating the ossa pubis, carefully and gradually, there is little danger of those parts suffering. If inflammation or laceration of the neck of the bladder take place, it must be attributed, our author thinks, to the rashness or inattention of the operator.

After all, experiments made on dead bodies will, we imagine, have little effect in determining surgeons to have recourse to an operation, in many respects so objectionable.

Account of a new instrument for rupturing the membranes.—Instruments for this purpose, we apprehend, can seldom or never be necessary. The introduction of the hand into the vagina, where it is necessary to turn, will almost always render it very easy to break the membranes.

XX.

FERRO, *Versuche mie neuen Arzneymitteln, &c. i. e.*
 Trials of new Remedies. By Dr. Pascal-Joseph
 Ferro. Part I. 8vo. Vienna, 1793.

THESE experiments relate to the effects of vital air, (*dephlogisticated gas* of Priestley, &c. and the *oxygen gas* of the French chemists) and to the use of the *Cortex Angusturæ*. The first experiments, to the number of eight, were made ten years ago; from these the author deduces, that the inspiration of vital air dissipates the spasm of the vesicles of the lungs; prevents the accession of those spasms; diminishes and removes the disposition to inflammation in the lungs; dissolves the extravasated lymph, which obstructs the pulmonary vesicles; produces good effects in the dropsy of the chest; is a good remedy in the tuberculous consumption; diminishes hectic fever; relieves the oppression which subsists after inflammation of the chest; cures speedily and effectually the periodical asthma, and hooping cough; augments the secretion of urine, especially in affections of the breast; produces no effect in rheumatic fevers.

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The principal properties of vital air, above-mentioned, are in direct opposition to those discovered by M. Fourcroy, that is to say, the anti-inflammatory, resolvent, and diuretic effects. But the characters of those diseases, which are here ranked as inflammatory, are not pointed out with sufficient precision; we cannot therefore, with certainty, infer the antiphlogistic power of this remedy. It is the same of those cases which are adduced as proofs of the resolvent power of vital air; that is, the obstructions and adhesions of the lungs, arising from the transudation of viscid lymph. In the first place, we have no certain sign of the presence of such affections; and, secondly, the author adopts his own opinions on insufficient grounds; for the supposition that such a thing is possible, is, with him, a sufficient reason for concluding, that it actually exists. For example; he says, "from these, and all the other symptoms, I suspected a dropsy of the chest, in which the water was accumulated in the anterior duplicature of the mediastinum; it was possible too that there might be an effusion of coagulable lymph; hence the dull, heavy pain, when the patient lay down; when he moved suddenly; and in getting up: hence, the greatest pressure was felt anteriorly, on the left side," &c. From premises so uncertain as these, it is impossible to draw any certain conclusion.

The diuretic virtue of vital air is less subject to doubt ; for whether the diagnostic be well founded or not, it is not the less certain, that in the cases here recited, the use of it was followed by a more copious evacuation of urine. The author undertakes to explain this phænomenon, by the attenuating effect of this air on the blood. We shall confine ourselves, however, to the facts. What appears, from these experiments, is, that the vital air has been, in these circumstances, an efficacious means of relief ; that it was of real utility in some affections of the breast ; but it does not appear, that these diseases were of an inflammatory nature.

In the preparation of vital air, the author advises to use manganese, instead of nitre.

With respect to the experiments relative to the cortex angusturæ, the author considers its effects, as entirely analogous to those of Peruvian bark ; and that it requires the same cautions and attentions, in its use. It appears, however, that smaller doses are sufficient than of Peruvian bark, and that its effects are more certain.

XXI.

KRITICK der VORZUGLICHSTEN HYPOTHETHESEN,
 &c. i. e. *An Examination of the principal Hypotheses, concerning the Nature, the Cause, and Cure of the Puerperal Fever.* By M. Satchleben.
 Leipzig, 1793.

THIS work is divided into two parts. The first contains a criticism on the principal hypotheses that have been held, respecting the nature of the puerperal fever. The second part points out the method of treatment recommended by the author. He first gives a definition of the puerperal fever; and afterwards examines the question, if this fever deserves the title of specific; he subjoins, at the same time, the opinions of Thompson, Kirkland, Zeller, Walsh, and Stark, together with his own, on the subject. He is of opinion, that the puerperal fever is, by many experienced physicians, improperly reckoned, as of a particular genus. He contends strongly, that this fever is only a simple modification of the known species of fevers, and that it takes its origin from the levan of the prevailing epidemic constitution, whether inflammatory, biliary, or putrid; modified by the habit of body,
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the mode of living, the age, the temperament of the patient, the preceding causes, the season, the temperature, &c. In the second part, he speaks of the method of treatment in each particular species of the disease, as well theoretically as practically ; and he endeavours to support his opinions, by those of the principal physicians who have written on the subject.

Cure radicale de l'Hydrocele. On the radical Cure of the Hydrocele. By Imbert De Lonnes, M.D. of the Faculty of Caen, &c. &c. Paris.

AFTER an anatomical description of the parts concerned in this disease, the author treats separately of the different methods of cure which have been employed. On the subject of the incision, he observes, that Celsus is the first who treated of this mode of cure. Celsus removed some part of the tunica vaginalis. M. Imbert describes the different methods of performing the incision by Celsus, Paulus Ægineta, Fabricius ab Aquapendente, Albucasis, Guy de Chauliac, Ambroise

broſe Parè, Fabricius Hildanus, and many others. He concludes that this operation, as hitherto practised, is not ſufficiently certain in inducing a radical cure. It is besides liable to be followed by great inflammation, gangrene, and even death. With respect to the excision of the ſac, the ſame objections, as far as regards inflammation, &c. are applicable. The cure by cauſtic is equally objected to by our author.

The ſeton was in frequent uſe in the time of Rhazes, in the eleventh century, and was forgotten till it was revived by Guy de Chauliac, in the fourteenth century, who employed it as a palliative only. This method M. Imbert conſiders as extremely ſevere, and uncertain in its effects.

Franco may be conſidered as the firſt who practised the cure by the tent. Salicet and Guillaumeau uſed this in ſome instances with ſucceſs. From the diſference of opinion on the uſe of this method, and from his own obſeruations on the ſubjeet, our author is induced to reje ct it in practice.

The mode of cure, by injection, M. Imbert attributes to Lambert, a diſtinguished ſurgeon of Marſeilles; his aqua phagedenica, composed of lime

lime water and corrosive sublimate ; his method of proceeding, with several observations, are here laid down. Lambert himself says, that in some patients, who had been cured by this method, the testicle was hardened and wasted, accompanied with the loss of its powers. Levret employed an injection, consisting of a solution of the lapis infernalis. Dubertrand and Sabatier employed the same method. Monro made use of spirits of wine ; but this produced such excessive irritation, that he made use of wine alone instead of it. The author gives a detail of the different injections employed by different practitioners, with several observations which speak little in favour of this mode of cure.

Upon the whole, M. Imbert observes, on a retrospect of all these different methods, it appears, that some of them are productive frequently of dangerous and fatal accidents ; many of them are tedious and cruel ; that success is uncertain from them, and that it is of importance to humanity, to find out a gentle and certain method of curing the disease. He is of opinion that these ends are obtained by his own mode of operating, which is as follows :

Pinching up the integuments with the aid of an assistant, as in the operation for the bubonocelle, he makes an incision of three, or even four

four inches in length, if the tumour is very large, taking care to preserve enough at the bottom of the scrotum, to contain the inferior part of the testicle after the operation. This being done, he makes another incision through the tunica vaginalis, corresponding with the former, which he begins at the lower part of the first incision, with the point of a bistoury, as if he meant to make a simple puncture only. The opening being made, he immediately introduces a grooved director, which enables him to divide the tunic from below upwards, without danger of wounding the adjoining parts. Then separating the sides of the tunic and integuments, he introduces on each side of the testicle a doffil of soft lint, suffering a part of it to project beyond the lips of the wound, for the easier withdrawing it afterwards. By this means suppuration takes place, without any adhesion of the tunica vaginalis to the tunica albuginea, which might give occasion to a fresh accumulation. The remainder of the operation consists in filling the bottom of the wound with scraped lint, sprinkled with colophony, to prevent hæmorrhage; lastly, applying a plegget, and the usual dressings on the outside. If the tunica vaginalis is much thickened, cartilaginous, or in any way diseased, it should be entirely removed, which else must be effected by the suppuration which succeeds. The lint is suffered to remain till the suppuration is

complete, and granulations begin to form, when it is withdrawn, and the cure is speedily accomplished.

Our readers will perceive, that this is very nearly the mode of cure which has been put in practice with the greatest success, and recommended by Mr. Bell of Edinburgh, for several years past. Compared with Mr. Bell's method, it appears in some respects, unnecessarily rough and severe, whilst it cannot be more successful. If the reasons above-mentioned for removing the tunica vaginalis, by excision be admitted, we fear this part of the operation must pretty frequently be put in practice. A thickened cartilaginous state of the tunica vaginalis is not uncommonly found, where the disease has long subsisted; we cannot agree, however, with M. Imbert, that this is a sufficient reason for its removal. The suppuration that follows will, we are of opinion, be found in almost all cases, equal to reducing this tunic to a proper state for union with the tunica albuginea.

THE
MEDICAL and CHIRURGICAL
REVIEW.

For NOVEMBER 1794.

XXIII.

Thesaurus Medicaminum. A new Collection of Medical Prescriptions, distributed into twelve Classes, and accompanied with Pharmaceutical and Practical Remarks, exhibiting a View of the present State of the Materia Medica, and Practice of Physic, both at Home and Abroad. By a Member of the London College of Physicians, second Edit. 1794. 8vo. p. 412. Baldwin, London.

THE first edition of this work appeared in the year 1791. ‘It was thought,’ the author observes, ‘that a volume of Medical Formulae, selected from the best authors, and accompanied with practical remarks, would be of

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use in refreshing the memory, and directing the judgment of the young practitioner. A distribution of the formulæ into classes according to their effects, or, in other words, according to the indications they are required to answer, seemed to be the best mode of arrangement; as, in this way, all those medicines which possess similar virtues, are brought under one point of view; so that, if those which are first tried, prove ineffectual, others, suited to fulfil the proposed intention, immediately catch the eye of the prescriber.'

In this collection, all the medicines are referred to twelve classes, under the titles of *Evacuants* — *Emollients* — *Absorbents* — *Refrigerants* — *Antiseptics* — *Astringents* — *Tonics* — *Stimulants* — *Antispasmodics* — *Narcotics* — *Anthelmintics* — and *Heteroclitæ*. The title of the last class is taken from Hartmann*, and comprehends those remedies which could not be referred to any of the other divisions, and which are commonly known under the name of *specifics*, a term that has been purposely avoided, as conveying false and empirical notions.

‘ As the medical world was scarcely become reconciled to the reformed language of the London College when the first edition of this Collection

* Hartmanni Formulae Remediorum, 8vo. Lipsie, 1770.

lection was published, the Editor did not then venture to alter the old pharmaceutical names used in the original prescriptions; now, however, that the new nomenclature is pretty generally adopted, he has thought it proper to reject the old terms and substitute the new ones in all the formulæ.* At the end of the work the author has inserted comparative tables of the old and new names, for the use of such as may not be yet sufficiently familiarized with the London Pharmacopœia; a catalogue of the new terms employed by the Edinburgh College has also been added.

In this second edition, many new formulæ have been added from several late pharmaceutical works, and especially from the *Fulda Dispensatory**, which may be deservedly numbered among the best pharmacopœias of the present day. All the prescriptions are in English.

As the matters contained in the last class (*Heteroclites*) and in the appendix are probably new to many of our readers, we shall present them with extracts of the most interesting parts.

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Arfenic

* *Dispensatorium Fuldense*, à F. A. Schlereth, Francofurti, 1791.

Arsenic Drops.

Take of levigated white arsenic prepared kali, each, sixty-four grains, distilled water, half a pint; put into a Florentine flask, and boil gently in a sand bath till the arsenic is completely dissolved. To the solution, when cold, add of

Compound spirit of lavender, half an ounce, distilled water, half a pint by measure, or rather (for greater accuracy) fifteen ounces and a half by weight.

Dose from two to twenty drops, in a glassful of water, twice or thrice a day; in agues, remitting fevers, and periodic head-achs. This is the *Solutio Mineralis* of Dr. Fowler.

The following is Dr. Fowler's table of the doses, proportioned to the different ages:

Years	Drops
Patients from 2 to 4 to take from	2 to 5
5 to 7	5 to 7
8 to 12	7 to 10
13 to 18	10 to 12
18 and upwards	12

* The hours for taking these drops, when ordered three times a day, are six o'clock in the morning, two o'clock in the afternoon, and ten o'clock at night; and when twice a day, ten in the

the morning, and ten at night. These hours are to be adhered to, whether they coincide with the paroxysms or not. In cases of agues, the drops are to be administered in doses proportioned to the age of the patient for five days; at the end of which, the fits being suspended, the medicine is to be laid aside for two or three days, and then repeated for three days more, to prevent a relapse. Eight days administration of the medicine in the manner above-mentioned, will, it is said, generally be found sufficient for the radical cure of agues. In remitting fevers, and in periodical head-achs, the drops are to be given in the same manner, and in the same doses, as in agues.'

' Vomitings, gripings, purgings, swellings, and anorexia, are among the troublesome symptoms which this medicine sometimes occasions. They generally, however, disappear on a discontinuance of the drops, or only require the exhibition of gentle opiates, and some warm cathartic, such as tincture of rhubarb.'

' Arsenic has likewise been employed as a remedy in cancers, and in the bite of venomous animals, and especially of mad dogs. In the first mentioned cases, viz. cancers, it has been used both internally and externally; but as paralytic and other disagreeable symptoms have arisen

arisen from its application, most of our practitioners seem to have thrown it aside. It appears from some late accounts, that the Hindoo physicians cure the elephantiasis by the use of arsenic internally. They make it into pills with pepper. They likewise employ it externally for the cure of various cutaneous disorders. It has been recommended as an antidote to the hydrophobia on the authority of a German peasant, who, as is stated by *Spoehr*, in his Appendix to *Afli's Essay on the Poison of Mad Animals*, cured many persons that had been bitten by mad dogs, and who, upon his death-bed, disclosed the receipt, in which arsenic was found to be one of the ingredients. This account appeared in 1787, since which time the public have been informed (1789) that this mineral enters into the composition of the East India *Snake Pills*, a medicine communicated to the Presidency of Madras by a native of Tanjore, and which (as we are told by Dr. Simmons) one of the Company's Surgeons has administered with apparent success, to persons bitten by mad dogs.'

Preparation of Muriated Barytes.

‘ Decompose heavy spar, according to Bergman and Scheele’s process*, and let a portion of the

* To decompose heavy spar according to Bergman’s method, mix together equal quantities of finely pulverized heavy

the earth thus obtained, be dissolved in pure marine acid. Let a separate portion of the same earth be rendered caustic, by exposing it in a crucible to a red heat, and let distilled water be poured upon it when cold. A small quantity of this barytic lime water, previously filtrated, being added to the solution of the earth in the marine acid, if the mixture remain transparent, the solution is pure; but if not, it is contaminated with earthy or metallic salts. In the latter case, let barytic lime water be slowly poured into the solution, till no farther precipitation takes place; and to the filtered liquor, let as much marine acid be added as may be necessary to saturate the superfluous earth. By this method, (which should be conducted with the utmost care) the solution may be rendered perfectly pure.

After saturating a given quantity of water with the muriated barytes, it is proper to add a little excess of acid. The addition of the acid in some measure deprives it of its bitter taste, and renders it more grateful to the stomach. It is necessary, however, that the quantity of acid which

is

heavy spar, prepared kali, and charcoal dust, put the mixture in a covered crucible, and subject it to a red heat for about an hour. Upon the calcined mass, after reducing it to powder, pour diluted nitrous or muriatic acid, till all effervescence ceases, and the liquor has a sour taste. Then filtrate the solution, and precipitate the ponderous earth with prepared kali (Bergman Sciagrap. §. 87.)

is thus added, should be very small; for otherwise the strength of the solution will be diminished by the precipitation of a considerable proportion of the salt. It is further of great importance, that a saturated solution be used, in order that the dose may be adjusted with sufficient accuracy; and, for the purpose of determining it with the greater precision, it is recommended that the solution be dropped from a small apothecary's phial, that the size of the drops may be nearly equal.'

' As the heavy spar sometimes contains lead and other poisonous metals, it is proper to determine, by the well known chemical tests, that the earth extracted from it, and the salt prepared therewith, be free from such contamination. An admixture of iron needs not to be regarded; it is rather useful than otherwise.'

' Dr. Crawford recommends this solution in doses of from three or four to ten or twelve drops twice a day, in any convenient vehicle, in scrophulous and cancerous affections.'

' From Dr. Crawford's account it appears, that in general, very little relief was afforded by this medicine in the last stages of cancer and consumption; but that in all the other cases in which it was tried, and particularly in scrophulous

lous complaints, it was productive of salutary effects.'

' Given in a moderate dose, this remedy appeared, in a few instances, to have increased the secretion by the skin, in a great variety of cases it occasioned an unusual flow of urine, and it almost universally improved the appetite and general health. It sometimes occasioned nausea and vertigo, and in large doses, he thinks it might be productive of much danger, by disordering the nervous system, and by operating violently as an emetic and purgative; and therefore Dr. Crawford very properly cautions those who are unskilful in medicine, not to tamper with this remedy. It is earnestly recommended, that after it begins to excite nausea, vertigo, or any other disagreeable symptom, the quantity be not farther augmented, and that no adult do venture to increase the dose beyond eighteen or twenty drops, without the advice of a medical man.

XXIV.

Joannis Georgii Jacobi Bernholdi Phil. Med.
 & Chir. D. &c. *Initia Doctrinæ de ossibus
 ac Ligamentis Corporis humani Tabulis expressa
 cum Introductione Generali in Anatomen univer-
 fam. Accedunt opuscula Rarissima Medici vetusti
 Cophonis, ars nempe medendi & Anatome porci.*
 Norimberg, 1794. Boosey, London, 3s. 6d.

THIS may be considered as the author's Text Book for the use of his anatomical pupils, and appears well calculated for the purpose intended. It commences with a brief chronological history of the rise and progress of anatomy, pointing out the various authors that have laboured in this field. A short extract will give our readers an idea of the plan the author has pursued in his work.

De designatione partium corporis humani externarum. Corpus humanum dividitur, in

1. *Truncum*, i. e. majorem corporis partem, cavitates pro recondendis aliis partibus, visceribus dictis, continentem; ex capite, thorace, abdomen constantem.

Truncus

Truncus hic dispescitur iterum, in

A. *Caput*, supremum corporis ac trunci partem, priscis venter supremus adpellatam, organis actionum animalium dicatam.

a. *Ipsum*. Notantur in illo

a. *Pars Capillata*, atque in hac

aa. *Sinciput*, anterior capillatæ partis portio.

bb. *Vertex*, media ac suprema capillatæ partis pars.

cc. *Occiput*, pars capillatæ partis posterior, ad nucham usque protensa.

dd. *Tempora*, laterales partis capillatæ partes, ad aures.

b. *Pars non capillata*, anterior, *facies dicta*. Notantur in illa

aa. *Frons*, suprema faciei pars glabra, ab oculis ad originem usque capillorum. Sulci, in fronte proiectiorum occurrentes, adpellantur *ruga*.

bb. *Oculi*. Crines, supra oculos linea curva positi, nominantur *supercilii*; tegumenta bulbi oculorum, *palpebræ*;

crines, in extremis palpebrarum, ciliorum gerunt nomen.

cc. *Nasus*, elevata maxime faciei pars, inter frontem, atque os, situs; foraminibus duobus, *naribus* dictis, preceditus; quarum septum intermedium, *septum* nominatur *narium*; suprema nasi pars fronti nexa, *radix*; media, *dorsum*; infima globosa, cartaliginea, *globulus nasi*, vocatur.

dd. *Os*, apertura faciei transversalis, infra nasum, cum partibus e quibus formatur, i. e. *labiis*, tam *superiori*, i. e. naso proximo, quam *inferiori*. Foveola in medio labii superioris occurrens, *philtrum* nominatur sive *lacuna*; ad utrumque labiorum extreum conspicuntur *mystaces*.

ee. *Mentum*, infima in medio sita prominens faciei pars, foveola interdum instructa, quæ *gelaſinum*, adpellatur.

ff. *Malæ*, *Genæ*, maximæ faciei, sub oculis ad latus sitæ, partes molles. Inflatæ vocantur *buccæ*.

gg. *Aures*, cum adpendice molli inferiore, *auricula* dicta.

b. Collum,

- b. Collum, inter caput ac thoracem sita pars,
cujus vocantur partes
 - a. Anterior, *jugulum*. Eminentia juguli
protuberans est *pomum Adami*, in maribus
majus.
 - b. Laterales, *regio scapularis*.
- c. Posterior, *cervix*: foveola in illius medio
occurrens, *nucha*.

B. *Thoracem, veteribus medium ventrem, &c. &c."*

Prefixed to the above work, we have the Treatises, above-mentioned in the title, of *Copho*, a writer, who is supposed to have lived about the 12th century. For what purpose these are now brought forward it is hard to guess. Full of the absurd and unintelligible jargon of the generality of writers of that age when they attempted to reason on causes, it will not readily be conceived, how they can in any degree contribute to the extension of medical science at the present day. An extract or two will, we imagine, completely satisfy the curiosity of the reader.

De consideratione diei & noctis in purgatione.

• Consideration must be had to the time of the day and night. For as the day and night consist

consist of four and twenty hours, each of the humours predominates during six hours. Thus *blood* reigns from the ninth hour of the night to the third hour of the day. *Choler* from the third to the ninth hour of the day. But *melancholy* predominates from the ninth hour of the day till the third of the night. Whilst *phlegm* reigns from the third hour of the night to the ninth. In summer if you would purge *choler* by vomit, you ought to exhibit your emetic a little before day, that by remaining some time in the stomach, it may operate at the time that *choler* predominates, and by that means purge it off. You should give your medicines at the same hours if you mean to purge off *melancholy* downwards. If therefore, you would purge *melancholy*, you should give your medicine previous to the ninth hour, that the remedy may operate, and produce its effect, at the time that this humour predominates. But if you would purge *phlegm*, the patient should sleep for three hours of the night or four, and then before midnight the medicine should be exhibited; nor should he be suffered to sleep afterwards. When the object is to lessen the *sanguineous* humour, the evacuation should be made in the morning; unless the patient is aged, or any peculiar affection should forbid the use of the lancet. If these rules are not attended to, and the evacuation is made at improper hours, the humour which then predominates will be carried

carried off, and not that which ought to be, and hence more harm than good will be done.'—But enough of this.

XXV.

An Account of the RILIOUS REMITTING YELLOW FEVER, as it appeared in the City of Philadelphia in the Year 1793. By Benjamin Rush, M. D. Professor of the Institutes, and of Clinical Medicine, in the University of Pensylvania. 8vo. p. 363. 6s. London, Dilly.

THE present work, as exhibiting proofs of accurate discernment, and sound judgment, would, in our opinion, have done honour to the pen of a Sydenham, or any, the most diligent observers of antiquity. Although the disease of which it treats, was local in its operation; and from its nature, confined, in great measure, to the warmer climates, the practitioner of every country and climate, may receive much useful instruction from the history of its symptoms, progress, and treatment, as here laid down by the excellent author. We shall give as full

full an account of the different parts of the work, as is possibly consistent with the limits of a Review, without fear of giving offence by the extent of our quotations.

Before proceeding to describe the fever, Dr. Rush gives a short account of the diseases which preceded it. These were, in general, of an inflammatory nature.

The first appearance of the Bilious Yellow Fever was in the month of August. Dr. Rush very early endeavoured to excite the attention of the citizens of Philadelphia to the subject. In this, however, he met with much opposition, and incurred much obloquy, not only from the inhabitants, but also from his brethren of the faculty, as if he had unnecessarily disturbed the public mind, with the supposed existence of a malignant and contagious fever in the city. A very short time gave abundant and melancholy proof of the fidelity of his observation.

Considerable difference of opinion arose with regard to the origin of the disease. Some supposed it to have been imported from the West Indies. A very general opinion prevailed, that the yellow fever could exist only by importation from that quarter. Our author's account of the origin

origin is very different. A quantity of damaged coffee, which was extremely offensive, also some putrid hides, and other putrid animal and vegetable substances, had lain on some of the public wharfs of the city; and from this, with much apparent reason, Dr. Rush deduces the origin of the disease. The streets adjoining to these wharfs were first affected, and the disease could clearly be traced from hence, in several instances, to the other parts of the city.

The seeds of the fever generally excited the disease in a few days. Dr. Rush met with several cases in which it acted, so as to produce a fever on the same day, in which it was received into the system, and he heard of two cases in which it excited sickness, fainting, and fever, within one hour after the persons were exposed to it. No instance occurred to him in which there was a longer interval than sixteen days, between the contagion being received into the body, and the production of the disease.

Whatever be the specific quality of the matter which produced the fever, it is certain, Dr. Rush says, that it acted as a stimulus upon the whole system. In a moderate degree, it produced only a quickness and fulness of the pulse; but when it was more active, it produced that species of debility which has been called *indirect*. It is

the reverse of *direct* debility, which is produced by the abstraction of natural and usual *stimuli* from the body. When the contagion acted with so much force, as to induce *indirect* debility, a fever sometimes followed without the aid of an exciting cause, but this was seldom the case. In ninety-nine cases out of an hundred, the formation of the disease could be distinctly traced to some causes which were capable of inducing indirect or direct debility upon the system. These were, fatigue of body or mind; heat, from every cause, but more especially the heat of the sun; intemperance in eating or drinking; fear; grief; cold; sleep; and immoderate evacuations.

The disease appeared with different symptoms, and in different degrees, in different people. They both likewise varied with the weather. The præursors, or premonitory signs of this fever were, costiveness, a dull pain in the right side, defect of appetite, flatulency, perverted taste, heat in the stomach, giddiness, or pain in the head, a dull—watery—brilliant yellow or red eye, dim and imperfect vision, a hoarseness, or slight sore throat, low spirits, or unusual vivacity, a moisture of the hands, a disposition to sweat at nights, or after moderate exercise, or a sudden suppression of night sweats. The dull eye, and the lowness of spirits appeared to be the effects of such an excess in the stimulus of

the

the contagion as to induce indirect debility; while the brilliant eye, and the unusual vivacity, seemed to have been produced by a less quantity of the contagion, acting as a cordial on the system. More or less of these symptoms frequently continued for two or three days before the patients were confined to their bed, and in some people they continued during the whole time of its prevalence in the city, without producing the disease.

Frequent as these precursors of the disease were, they were not universal. Many went to bed in good health, and awoke in the night with a chilly fit. Many rose in the morning after regular and natural sleep, and were seized at their work, or after a walk, with a sudden and unexpected attack of the feyer.

In the detail of the symptoms, instead of dividing them as they affect the animal, natural, and vital functions, Dr. Rush describes them as they appeared in the sanguiferous system; in the liver, lungs, and brain; in the alimentary canal; in the secretions and excretions; in the nervous system; in the senses and appetites; in the lymphatic and glandular system; upon the skin and in the blood.

With respect to the sanguiferous system, the author observes, that the blood vessels (and not the stomach and bowels according to Dr. War-

ren) are the “seat and throne” of this as well as of all other fevers. He has publicly taught for several years, that a fever is occasioned by a convulsion of the arterial system. Many of our readers will, we imagine, be disposed to call in question this piece of theory, but we are not here to enter into the dispute. When the epidemic, now spoken of, came on with a full tense, and quick pulse, this convulsion, the author says, was very perceptible; but it frequently came on with a weak pulse; often without any preternatural frequency or quickness, and sometimes so low as not to be perceived without pressing the artery. In some cases the pulse intermitted; and these intermissions occurred in several persons who were infected, but who were not confined by the fever. In some there was a preternatural slowness of the pulse, which was sometimes accompanied with a dilated pupil of the eye, owing probably to inflammation or congestion in the brain.

Hæmorrhages occurred in the beginning of the disorder, chiefly from the nose and uterus. As the disease advanced, the discharges of blood became more universal. They occurred from the gums, ears, stomach, bowels, and urinary passages.

The author next proceeds to mention the symptoms of the fever as they appeared in the liver,

liver, the lungs, and the brain. There were but few marks of hepatic affection. Dr. Rush met but with two cases in which the patient could lie only on the right side. Many complained of a dull pain in the region of the liver, but very few complained of soreness to the touch, or pain at the pit of the stomach. In some, determination of blood took place to the lungs. But the brain was chiefly affected with morbid congestion in this disorder. It was indicated by the suffusion of blood in the face, redness of the eyes, dilatation of the pupils, pain in the head, hemorrhages from the nose and ears, by the sickness or vomiting, and by an almost universal costive state of the bowels.

The stomach and bowels were affected in many ways in this fever. The disease seldom appeared without nausea or vomiting. Sometimes a pain at the stomach was felt. Sometimes green or yellow bile was discharged from the stomach on the first day of the disorder, but it oftener continued for two days without discharging any thing, but the drinks which were taken by the patient. The bowels were generally costive.

With respect to the secretions and excretions, there appeared to be a preternatural secretion of bile, which was discharged from the stomach and

and bowels in large quantities, and of very different qualities and colours, in some cases yellow, in others, black. The urine was in some cases plentiful and of a high colour; sometimes pale, and at others, turbid. Many people were relieved by copious *sweats* on the first day of the disorder. They were in some instances spontaneous, and in others, they were excited by diluting drinks, or by strong purges. They were often of a yellow colour, and sometimes had an offensive smell.

The tongue was in every case moist, and of a white colour on the first and second days of the fever: As the disease advanced, it assumed a red colour, and a smooth shining appearance. Towards the close of the fever, a dry black streak appeared in its middle, which gradually extended to every part of it. Few recovered after this appearance took place.

In the nervous system the symptoms of the fever were different, according as it affected the brain—the muscles—the nerves—or the mind. In some apoplexy was induced, which generally proved fatal. The last stage of the fever exhibited few of the symptoms of the common typhus or nervous fever. Tremors of the limbs and twitchings of the tendons were uncommon. While the muscles and nerves in many cases exhibited

exhibited many marks of preternatural weakness; in some they appeared to be affected with preternatural excitement. Dr. Rush lost a patient in whom this state of morbid strength occurred to such a degree, that he stood up before his glaſs, and shaved himself on the day in which he died.

A delirium was a common symptom; many, however, passed through the whole course of the disease, without the least derangement in their ideas. Some were seized with maniacal symptoms. In these there was an apparent absence of fever.

The pain which attended the disorder was different, according as the system was affected by direct or indirect debility. In those cases in which the system sunk under the violent impression of the contagion, there was little or no pain. In proportion as the system was relieved from this oppression, it recovered its sensibility. The pain in the head was acute and distressing. The stomach towards the close of the disorder, was affected with a burning or spasmodic pain of the most distressing nature.

The ſenes and appetites exhibited several marks of the universal ravages of this fever upon the body. Deafneſs and dimneſs of ſight ſometimes took place. Thirſt and want of appetite
were

were present, as in most other fevers. The convalescence in this disorder was marked in some instances, by a sudden revival of the venereal appetite. The same was observed in the plague which raged at Messina in the year 1743.

Swellings in the inguinal and parotid glands took place in a few instances, which did not go into suppuration. .

The skin exhibited many marks of this fever. It was preternaturally warm in some cases, but it was often preternaturally cool. The yellow colour from which this fever has derived its name, was not universal. It seldom appeared where purges had been given in sufficient doses. It rarely appeared before the third, and generally about the fifth or seventh day of the fever. Its early appearance always denoted great danger. The eyes seldom escaped a yellow tinge. There were eruptions of various kinds on the skin: amongst the rest petechiæ were common in the latter stage of the fever. Carbuncles also took place in some.

The disease ended in death in various ways. In some it was sudden; in others it came on by gradual approaches. In some, the last hours of life were marked with great pain and strong convulsions; but in many more, death seemed to insinuate

insinuate itself into the system, with all the gentleness of natural sleep.

The author proceeds next to mention some peculiarities of the fever, which could not be brought in under any of the foregoing heads.

In every case that came under his care, there were evident remissions, or intermissions of the fever, or of such symptoms as were substituted for fever. It in general assumed a tertian type.

The disease continued for fifteen, twenty, and even thirty days, in some people. Dr. Rush divides the patients affected with the disorder into three classes; first, those in whom the stimulus of the contagion produced the symptoms of indirect debility, such as coma, languor, sighing, a disposition to syncope, and a weak or slow pulse.— Second, those in whom the contagion acted with less force, producing great pain in the head, and other parts of the body; delirium, vomiting, heat, thirst, and a quick, tense, or full pulse, with obvious remissions or intermissions.— The third class includes all those persons, in whom the stimulus of the contagion acted so feebly, as not to confine them to their beds or houses. This class was very numerous, and many of them recovered without medical aid.

All ages were affected by this fever, but persons between fourteen and forty years of age, were most subject to it. Men were more subject to it than women. Pregnancy seemed to expose women to it. The refugees from the West Indies universally escaped it. This was not the case with the natives of France, who had been settled in the city. The blacks took the disease in common with the white people, and many of them died of it, though the disease in them was lighter.

There did not appear to be any advantage in smelling vinegar, tar, camphor, or volatile salts, in preventing the disorder. Bark and wine were equally ineffectual for that purpose. Nor did the white-washing of walls secure families from the contagion. Dr. Rush thought the chewing of garlick was of some use as a preventative.

After the 15th of September, the atmosphere of every street was loaded with contagion; and there were few citizens in apparent good health, who did not exhibit one or more of the following marks of its presence in their bodies; a yellowness in the eyes, and sallow skin; a preternatural quickness of the pulse; frequent and copious discharges by the skin of yellow sweats; scanty, high-coloured urine; irregular appetite; costiveness;

costiveness; wakefulness; head-ach: preternatural dilatation of the pupils.

From the 25th of August to the 15th of October, there was hardly a drop of rain, and all this time there prevailed a great stillness of the atmosphere.

The number of deaths between the 1st of August and the 9th of November, amounted to 4044; a few of these happened from other causes.

The same difference in opinion that took place amongst the faculty with regard to the origin of the disease, subsisted also as to the method of treatment, and was the occasion of inconceivable mischief.

At the first appearance of the disease in the city, Dr. Rush treated it as a disease of debility. He gave bark in all its usual forms of infusion, powder, and tincture. He joined wine, brandy, and aromatics with it. He applied blisters to the limbs, neck, and head. Finding them ineffectual, he attempted to rouse the system, by wrapping the whole body, agreeably to Dr. Hume's practice, in blankets dipped in warm vinegar. To these remedies, he added one more; viz. rubbing the right side with mercurial ointment, with a view of exciting the action of

the vessels in the whole system, through the medium of the liver. None of these remedies appeared to be of any service; for only three out of thirteen recovered to whom they were applied.

Baffled in every attempt to stop the ravages of this fever, Dr. Rush did not abandon a hope that the disease might yet be cured. Some passages in a manuscript account of the yellow fever as it prevailed in Virginia, in the year 1741, which had been put into his hands by Dr. Franklin, pointing out the utility of evacuations in the cure of that disease, determined our author to adopt the same treatment in the present instance. For this purpose he exhibited ten grains each of calomel and jalap; to be repeated every six hours, until they procured four or five large evacuations. The effects of this powder not only answered, but far exceeded his expectations. It perfectly cured four out of the first five patients to whom he gave it, notwithstanding some of them were advanced several days in the disorder. After such a pledge of the safety and success of this medicine, he gave it afterwards with confidence. It still continued to be almost uniformly effectual in all those cases in which it was exhibited. But the author did not rely only on purging, to cure the disease. The theory of its proximate cause, which he had adopted, led him to

to use other remedies, to abstract excess of stimulus from the system: These were *blood letting, cool air, cold drinks, low diet, and applications of cold water to the body.*

Notwithstanding the efficacy of this method was manifest in the clearest colours; notwithstanding the success of it was so great as to have impressed the greater part of the citizens, so that their applications to Dr. Rush for his remedies, were far too numerous to be complied with, it nevertheless met with the greatest opposition from the majority of the practitioners, and even from the College of physicians as a body; who, influenced by the theory of some of its members, and by the report of Dr. Stevens, who had formerly practised in the West Indies, enjoined a stimulant plan of treatment, with the most liberal use of the bark, wine, opium, and the cold bath! In spite of all opposition however, Dr. Rush had the satisfaction, at length, of seeing his plan almost universally adopted.

Besides the two modes of practice above-mentioned, there were two other modes of practice adopted, the one by *moderate purging*, with calomel only, and moderate bleeding, on the first or second day of the fever, and afterwards by the copious use of bark, wine, laudanum, and aromatic tonics. This practice was supported
by

by an opinion, that the fever was inflammatory in its first, and putrid in its second stage; the other mode referred to, was peculiar to the French physicians, several of whom had arrived in the city from the West-Indies just before the disorder made its appearance. Their remedies were various. Some of them prescribed nitre, tremor tartari, camphor, centaury tea, the warm bath, glysters, and moderate bleeding; while a few used lenient purges, and large quantities of tamarind water, and other diluting drinks. These modes of practice were scarcely more successful, Dr. R. observes, than the tonic and stimulant one. They resembled throwing water and oil at the same time upon a fire, in order to extinguish it.

The following very affecting account, which the author gives, of the state of his body and mind, during the late epidemic, will serve to throw additional light upon the disorder; and, as he observes, probably illustrate some of the laws of the animal œconomy. It serves, at the same time to point out the general distress and consternation which prevailed in the city, during the presence of this dreadful scourge.

‘ Some time before the fever made its appearance, my wife and children went into the state of New Jersey where they had long been in the habit of spending the summer months. My family about the 25th of August, consisted of my mother,

ther, a sister who was on a visit to me, a black servant man, and a mulatto boy. I had five pupils, viz. Warner Washington, and Edward Fisher, of Virginia; John Alston of South Carolina, and John Redman Coxe (grandson to Dr. Redman) and John Stall both of this city. They all crowded around me upon the sudden encrease of busines, and with one heart devoted themselves to my service, and to the cause of humanity.'

' The credit which the new mode of treating the disease acquired in all parts of the city, produced an immense influx of patients to me from all quarters. My pupils were constantly employed; at first in putting up purging powders, but after a while only in bleeding and visiting the sick.'

' Between the 8th and 15th of September, I visited and prescribed for, between an hundred and an hundred and twenty patients a day. Several of my pupils visited a fourth or fifth part of that number. For a while we refused no calls. In the short intervals of business which I spent at my meals, my house was filled with patients, chiefly the poor, waiting for advice. For many weeks I seldom ate without prescribing for numbers as I sat at my table. To assist me at these hours, as well as in the night, Mr. Stall, Mr. Fisher and Mr. Coxe accepted of rooms in my house, and became members of my family. Their labours now had no remission.'

' Immediately after I adopted the antiphlogistic mode of treating the disorder, I altered my manner of living. I left off drinking wine and malt liquors. The good effects of the disuse of these liquors, helped to confirm me in the theory I had adopted of the disease. A troublesome head-ach, which I had occasionally felt, and which excited a constant apprehension that I was taking the fever, now suddenly left me. I likewise at this time left off eating solid animal food, and lived wholly, but sparingly, upon weak broth, potatoes, raisins, coffee, and bread and butter.'

' From

‘ From my great intercourse with the sick, my body became highly impregnated with the contagion. My eyes were yellow, and sometimes a yellowness was perceptible in my face. My pulse was preternaturally quick, and I had profuse sweats every night. These sweats were so offensive as to oblige me to draw the bed-clothes close to my neck to defend myself from their smell. They lost their savor entirely upon my leaving off the use of broth, and living entirely upon milk and vegetables. But my nights were rendered disagreeable, not only by these sweats, but by the want of my usual sleep, produced in part by the frequent knocking at my door, and in part by anxiety of mind, and the stimulus of the contagion upon my system. I lay down in conformity to habit only, for my bed ceased to afford me rest or refreshment. When it was evening, I wished for morning; and when it was morning, the prospect of the labours of the day, caused me to wish for the return of evening. The degree of my anxiety may be easily conceived, when I add, that I had at one time upwards of thirty heads of families under my care: among these were Mr. Josiah Coates, the father of eight, and Mr Benjamin Scull, and Mr. John Morrell, each fathers of ten children. They were all in imminent danger; but it pleased God to make me the instrument of saving each of their lives. I rose at six o’clock, and generally found a number of persons waiting for advice in my shop or parlour. Hitherto the success of my practice gave a tone to my mind, which imparted preternatural vigour to my body. It was meat and drink to me to fulfil the duties I owed to my fellow citizens in this time of great and universal distress. From a hope that I might escape the disease, by avoiding every thing that could excite the contagion, I carefully avoided the heat of the sun, and the coldness of the evening air. I likewise avoided yielding to every thing that should raise or depress my passions. But at such a time, the events which influence the state of the body and mind are no more under our command, than the winds or weather.

weather. On the evening of the 14th of September, after eight o'clock, I visited the son of Mrs. Berriman, near the Swedes' church, who had sent for me early in the morning. I found him very ill. He had been bled in the forenoon by my advice, but his pulse indicated a second bleeding. It would have been difficult to procure a bleeder at that late hour. I therefore bled him myself. From hanging over his breath and blood for ten minutes, and afterwards riding home in the night air, debilitated as I was by the labours of the day, I found myself much indisposed the ensuing night. I rose notwithstanding at my usual hour. At eight o'clock I lost ten ounces of blood, and immediately afterwards got into my chair, and visited between forty and fifty patients before dinner. At the house of one of them, I was forced to lie down a few minutes. In the course of this morning's labours, my mind was suddenly thrown off its pivots, by the last look, and the pathetic cries of a friend for *help*, who was dying under the care of a French physician. I came home about two o'clock, and was seized immediately afterwards with a chilly fit and a high fever. I took a dose of the mercurial medicine, and went to bed. In the evening I took a second purging powder, and lost ten ounces more of blood. The next morning I bathed my face, hands, and feet in cold water for some time. I drank plentifully during the day and night of weak hyson tea, and of water, in which currant jelly had been dissolved. At eight o'clock I was so well as to admit persons who came for advice into my room, and to receive reports from my pupils of the state of as many of my patients as they were able to visit; for unfortunately they were not able to visit them all (with their own) in due time; by which means several died. The next day I came down stairs, and prescribed in my parlour for not less than an hundred people. On the 19th of the same month, I resumed my labours, but in great weakness. It was with difficulty that I ascended a pair of stairs, by the help of a bannister. A slow fever, attended with irregular chills, and a

troublesome cough, hung constantly upon me. The fever discovered itself in the heat of my hands, which my patients often told me were warmer than their own. The contagion now began to affect me in small and infected rooms, in the most sensible manner. On the morning of the 4th of October I suddenly sunk down in a sick room upon a bed, with a giddiness in my head. It continued for a few minutes, and was succeeded by a fever which confined me to my house the remaining part of the day.'

' Every moment in the intervals of my visits to the sick, was employed in prescribing in my own house for the poor, or in sending answers to messages from my patients; time was now too precious to be spent in counting the number of persons who called upon me for advice. From circumstances, I believe it was frequently 150, and seldom less than 50 in a day, for five or six weeks. The evening did not bring with it the least relaxation from my labours. I received letters every day from the country, and from distant parts of the Union, containing inquiries into the mode of treating the disorder, and after the health and lives of persons who had remained in the city. The business of every evening was to answer these letters, also to write to my family. These employments by affording a fresh current to my thoughts, kept me from dwelling on the gloomy scenes of the day. After these duties were performed, I copied into my note book all the observations I had collected during the day, and which I had marked with a pencil in my pocket book in sick rooms, or in my carriage. To these constant labours of body and mind were added distresses, from a variety of causes. Having found myself unable to comply with the numerous applications that were made to me, I was obliged to refuse many every day. My sister counted forty-seven in one forenoon before eleven o'clock. Many of them left my door with tears, but they did not feel more distress than I did, from refusing to follow them.

them. Sympathy when it vents itself in acts of humanity, affords pleasure, and contributes to health, but the reflux of pity, like anger, gives pain, and disorders the body. In riding through the streets, I was often forced to resist the entreaties of parents imploring a visit to their children, or of children to their parents. I recollect, and even yet, I recollect with pain, that I tore myself at one time from five persons in Moravian-alley, who attempted to stop me; by suddenly whipping my horse, and driving my chair as speedily as possible beyond the reach of their cries.'

' The solicitude of the friends of the sick for help, may further be conceived of, when I add, that the most extravagant compensations were sometimes offered for medical services, and in one instance, for only a single visit. I had no merit in refusing these offers, and I have introduced an account of them, only to inform such physicians as may hereafter be thrown into a similar situation, that I was favoured with an exemption from the fear of death, in proportion as I subdued every selfish feeling, and laboured exclusively for the benefit of others. In every instance in which I was forced to refuse these pathetic and earnest applications, my distress was heightened by the fear, that the persons whom I was unable to visit, would fall into improper hands, and perish by the use of bark, wine, and laudanum.'

' But I had other afflictions besides the distress which arose from the abortive sympathy which I have described. On the 11th of September, my ingenious pupil Mr. Washington, fell a victim to his humanity. He had taken lodgings in the country, where he sickened with the disorder. Having been almost uniformly successful in curing others, he made light of his fever, and concealed the knowledge of his danger from me, until the day before he died. On the 18th of September Mr. Stall sickened in my house. A delirium

Irium attended his fever from the first hour it affected him. He refused, and even resisted force when used to compel him to take medicine. He died on the 23d of September. Scarcely had I recovered from the shock of the death of this amiable youth, when I was called to weep for a third pupil, Mr. Alston, who died in my neighbourhood, the next day. He had worn himself down before his sickness, by uncommon exertions in visiting, bleeding, and even fitting up with sick people. At this time Mr. Fisher was ill in my house. On the 26th of the month at twelve o'clock, Mr. Coxe, my only assistant, was seized with the fever, and went to his grandfather's. I followed him with a look, which I feared would be the last, in my house. At two o'clock my sister who had complained for several days, yielded to the disorder, and retired to her bed. My mother followed her, much indisposed, early in the evening. My black servant man had been confined with the fever for several days, and had on that day for the first time quitted his bed. My little mulatto boy of eleven years old, was the only person in my family who was able to afford me the least assistance. At eight o'clock in the evening, I finished the business of the day. A solemn stillness at that time pervaded the streets. In vain did I strive to forget my melancholy situation by answering letters, and by putting up medicines to be distributed next day among my patients. My faithful black man crept to my door, and at my request sat down by the fire, but he added by his silence and dullness, to the gloom which suddenly overpowered every faculty of my mind.'

'On the first day of October at two o'clock in the afternoon, my sister died. I got into my carriage within an hour after she expired, and spent the afternoon in visiting patients. According as a sense of duty, or as grief has predominated in my mind, I have approved and disapproved of this act, ever since. She had borne a share in my labours.

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She had been my nurse in sickness, and my casuist in my choice of duties. My whole heart reposed itself in her friendship. Upon being invited to a friend's house in the country, when the disease made its appearance in the city, she declined accepting the invitation, and gave as a reason for so doing, that I might probably require her services in case of my taking the disorder, and that if she were sure of dying, she would remain with me, provided that by her death, she could save my life. From this time I declined in health and strength. All motion became painful to me. My appetite began to fail. My night sweats continued. My short and imperfect sleep, was disturbed by distressing or frightful dreams. The scenes of them were derived altogether from sick rooms, and grave-yards. I concealed my sorrows as much as possible from my patients, but when alone, the retrospect of what was past, and the prospect of what was before me, the termination of which was invisible, often filled my soul with the most poignant anguish. I wept frequently when retired from the public eye, but I did not weep over the lost members of my family alone. I beheld or heard every day of the deaths of citizens useful in public, or amiable in private life. It was my misfortune to lose as patients, the Rev. Mr. Fleming and Mr. Graefel, both exhausted by their labours of piety and love among the poor, before they sickened with the disorder. I saw the last struggles of departing life in Mr. Powel, and deplored his death, an upright and faithful servant of the public, as well as a sincere and affectionate friend. Often did I mourn over persons who had by the most unparalleled exertions, saved their friends and families from the grave, at the expence of their own lives. Many of these martyrs to humanity were in humble stations. Among the members of my profession with whom I had been most intimately connected, I had daily cause of grief and distress. I saw the great and expanded mind of Dr. Penington, shattered by delirium, just before he died. He was to me dear and beloved, like a

younger

younger brother. He was moreover a Joab in the contest with the disease. Philadelphia must long deplore the premature death of this excellent physician. Had he lived a few years longer, he would have filled an immense space in the republic of medicine. It was my affliction to see my friend Dr. John Morris breathe his last, and to hear the first effusions of the most pathetic grief from his mother, as she bursted from the room in which he died. But I had distress from the sickness, as well as the deaths of my brethren in physic. My worthy friends Dr. Griffitts, Dr. Say, and Dr. Mease, were suspended by a thread over the grave, nearly at the same time. Heaven in mercy to me, as well as in kindness to the public, and their friends, preserved their lives. Had they died, the measure of my sorrows would have been complete.'

' I have said before, that I early left off drinking wine; but I used it in another way. I carried a little wine in a vial in my pocket, and when I felt myself fainty, after coming out of a sick room, or after a long ride, I kept about a spoonful of it in my mouth for half a minute, or longer, without swallowing it. So weak and excitable was my system, that this small quantity of wine refreshed and invigorated me as much as half a pint would have done at any other time. The only difference was, that the vigour I derived from the wine in the former, was of shorter duration than when taken in the latter way.'

' For the first two weeks after I visited patients in the yellow fever, I carried a rag wetted with vinegar, and smelted it occasionally in sick rooms: but after I saw and felt the signs of the universal presence of the contagion in my system, I laid aside this, and all other precautions. I rested myself on the bed-side of my patients, and I drank milk, or eat fruit in their sick rooms. Besides being saturated with the contagion, I had another security against being infected by

by my patients, and that was, I went into scarcely a house which was more infected than my own. Most of the people who called upon me for advice, left a portion of contagion behind them. Four persons died next door to me on the east; three a few doors above me on the west; and five in a small frame house on the opposite side of the street, towards the south. On the north side, and about 150 feet from my house, the fever prevailed with great malignity in the family of Mr. James Cresson. But this was not all. Many of the poor people who called upon me for advice, were bled by my pupils in my shop, and in the yard, which was between it and the street. From the want of a sufficient number of bowls to receive their blood, it was sometimes suffered to flow and putrify upon the ground. From all these sources, streams of contagion were constantly poured into my house, and conveyed into my body by the air, and in my aliment. Thus charged with the fuel of death, I was frequently disposed to say with Job, and almost without a figure, to "corruption, thou art my father; and to the worm, thou art my mother and my sister."

'The deaths of my pupils and sister have often been urged as objections to my mode of treating the fever. Had the same degrees of labour and fatigue which preceded the attack of the yellow fever in each of them, preceded an attack of a common pleurisy, I think it probable that some, or perhaps all of them, would have died with it. But when the influence of the concentrated contagion which filled my house, was added to that of constant fatigue upon their bodies, what remedies could be expected to save their lives? Under the above circumstances, I consider the recovery of the other branches of my family from the fever (and none of them escaped it) with emotions, such as I should feel, had we all been revived from apparent death, by the exertions of a humane society.'

‘ In getting hastily out of my carriage about the 22d of September, I wounded one of my fingers with a small nail. As my hands were constantly exposed to the contagion of the fever in feeling pulses, I had this wound carefully wrapped up, from an apprehension that the contagion when received directly into the blood, might more certainly excite the fever, than when received in the ordinary way. In the hurry of business, the rag dropped off my finger without my noticing it. The wound inflamed, but healed notwithstanding in a few days, and I found no inconvenience from it.’

‘ The issue of this accident was highly satisfactory to me, as it established the analogy between the small-pox and yellow fever, and confirmed me in the propriety of preparing the body for the reception of the latter, by the same regimen, as for the former disorder.’

‘ For upwards of six weeks I did not taste animal food, nor fermented liquors of any kind. The quantity of aliment which I took inclusive of drinks, during this time, was frequently not more than one or two pounds in a day. Yet upon this diet, I possessed for a while uncommon activity of body. This influence of abstinence upon bodily exertion, has been happily illustrated by Dr. Jackson in his directions for preserving the health of soldiers in hot climates. He tells us, that he walked an hundred miles in three days in Jamaica, during which time he breakfasted on tea, supped on bread and salad, and drank nothing but lemonade or water. He adds further, that he walked from Edinburgh to London in eleven days and a half, and that he travelled with the most ease when he only breakfasted and supped, and drank nothing but water. The fatigue of riding on horseback, is prevented or lessened by abstinence from solid food. Even the horse suffers least from a quick and long journey, when he is fed sparingly with hay.

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These facts add weight to the arguments formerly adduced, in favour of a vegetable diet in preventing or mitigating the action of the contagion of malignant fevers upon the system. In both cases the abstraction of stimulus, removes the body further from the reach of indirect debility.'

' Food supports life as much by its stimulus, as by affording nourishment to the body. Where an artificial stimulus acts upon the system, the natural stimulus of food ceases to be necessary. Under the influence of this principle, I increased or diminished my food with the signs I discovered of the increase, or diminution of the contagion in my body. Until the 15th of September I drank weak coffee, but after that time, I drank nothing but milk, or milk and water in the intervals of my meals. I was so satisfied of the efficacy of this mode of living, that I believed life might have been preserved, and a fever prevented, for many days with a much greater accumulation of the contagion in my system, by means of a total abstinence from food. Poison is a relative term, and an excess in quantity, or a derangement in place, is necessary to its producing deleterious effects. The contagion of the yellow fever produced sickness and death, only from the excess of its quantity, or from its force being increased by the addition of those other stimuli which I have elsewhere called exciting causes.'

' In addition to low diet, as a preventative of the disorder, I obviated costiveness by taking occasionally a calomel pill, or by chewing rhubarb.'

' I had read, and taught in my lectures, that fasting increases acuteness in the sense of touch. My low living had that effect in a certain degree upon my fingers. I had a quickness in my perception, of the state of the pulse in the yellow fever, that I had never experienced before in any other disorder. My abstemious diet, assisted perhaps by the

state of my feelings, had likewise an influence upon my mind. Its operations were performed with an ease, and a celerity which rendered my numerous and complicated duties, much less burdensome, than they would probably have been under other circumstances of diet, or a less agitated state of my passions.'

' My perception of the lapse of time was new to me. It was uncommonly slow. The ordinary business and pursuits of men appeared to me in a light that was equally new. The hearse and the grave mingled themselves with every view I took of human affairs. Under these impressions I recollect being as much struck with observing a number of men employed in digging the cellar of a large house, as I should have been at any other time, in seeing preparations for building a palace upon a cake of ice. I recollect further, being struck with surprise about the 1st of October, in seeing a man busily employed in laying in wood for the approaching winter. I should as soon have thought of making provision for a dinner on the first day of the year 1800.

In the account of my distresses, I have passed over the slanders which were propagated against me by some of my brethren. I have mentioned them only for the sake of declaring in this public manner, that I most heartily forgive them; and that if I discovered at any time, an undue sense of the unkindness and cruelty of those slanders, it was not because I felt myself injured by them, but because I was sure they would irreparably injure my fellow citizens, by lessening their confidence in the only remedies that I believed to be effectual in the reigning epidemic. One thing in my conduct towards these gentlemen may require justification; and that is, my refusing to consult with them. A Mahometan and a Jew might as well attempt to worship the Supreme Being in the same temple, and through the medium of the same ceremonies, as two Physicians of opposite principles.

principles and practice, attempt to confer about the life of the same patient. What is done in consequence of such negotiations (for they are not consultations) is the ineffectual result of neutralised opinions; and wherever they take place, would be considered as the effect of a criminal compact between physicians, to assess the property of their patients, by a shameful prostitution of the dictates of their consciences. Besides, I early discovered that it was impossible for me by any reasonings, to change the practice of some of my brethren. Humanity was therefore on the side of leaving them to themselves; for the extremity of *wrong* in medicine, as in morals and government, is often a less mischief, than that mixture of *right* and *wrong* which serves by palliating, to perpetuate evil.

After the loss of my health, I received letters from my friends in the country, pressing me in the strongest terms to leave the city. Such a step had become impracticable. My aged mother was too infirm to be removed, and I could not leave her. I was moreover part of a little circle of physicians, who had associated themselves in support of the new remedies. This circle would have been broken by my quitting the city. The weather varied the disease, and in the weakest state of my body, I expected to be able from the reports of my pupils, to assist my associates in detecting its changes, and in accommodating our remedies to them. Under these circumstances, it pleased God to enable me to reply to one of the letters that urged my retreat from the city, that "I had resolved to stick to my principles, my practice, and my patients, to the last extremity."

"On the ninth of October, I visited a considerable number of patients, and as the day was warm, I lessened the quantity of my cloathing. Towards evening I was seized with a pain in the back, which obliged me to go to bed at eight o'clock. About twelve I awoke with a chilly fit. A

violent fever with acute pains in different parts of my body, followed it. At one o'clock I called for Mr. Fisher, who slept in the next room. He came instantly, with my affectionate black man to my relief. I saw my danger painted in Mr. Fisher's countenance. He bled me plentifully and gave me a dose of the mercurial medicine. This was immediately rejected. He gave me a second dose, which likewise acted as an emetic, and discharged a large quantity of bile from my stomach. The remaining part of the night was passed under an apprehension that my labours were near an end. I could hardly expect to survive so violent an attack of the fever, broken down as I was, by labour, sickness, and grief. My wife and seven children, whom the great and distressing events that were passing in our city, had jostled out of my mind for six or seven weeks, now resumed their former place in my affections. My wife had stipulated, in consenting to remain in the country, to come to my assistance in case of my sickness; but I took measures, which, without alarming her, proved effectual in preventing it. My house was a Lazaretto, and the probability of my death, made her life doubly necessary to my family. In the morning, the medicine operated kindly, and my fever abated. In the afternoon it returned, attended with a great inclination to sleep. Mr. Fisher bled me again which removed the sleepiness. The next day the fever left me, but in so weak a state, that I awoke two successive nights with a faintness which threatened the extinction of my life. It was removed each time by taking a little aliment. My convalescence was extremely slow. I returned in a very gradual manner to my former habits of diet. The smell of animal food, the first time I saw it at my table, forced me to leave the room. During the month of November, and all the winter months I was harrassed with a cough, and a fever somewhat of the hectic kind. The early warmth of the spring removed those complaints, and I now enjoy, through divine goodness, my usual state of health.'

XXVI.

A Translation of the Table of Chemical Nomenclature, proposed by DE GUYTON, formerly DE MORVEAU, LAVOISIER, BERTHOLET, and DE FOURCROY; with Additions and Alterations: To which are prefixed an Explanation of the Terms, and some Observations on the new System of Chemistry. By G. Pearson, M. D. 4to. 56 p. London, 1794. Johnson.

THE science of Chemistry has, within a few years, undergone such considerable alterations, both in its principles and terms, that a student of the old school, uninformed of the changes it has undergone in these respects, would find himself bewildered, on a perusal of any of the modern treatises on chemical subjects. He would find himself under the necessity of studying an entire new system of nomenclature, before he could at all comprehend the doctrines and discoveries of modern chemists. In the work before us, Dr. Pearson has pointed out with precision the nature and extent of these alterations, together with the reasons which induced the French philosophers to attempt such a degree of innovation.

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‘ If the terms employed in any science imply the most essential properties of the things which those terms are intended to signify ; and if these terms be as few and as short, as is consistent with the meaning to be conveyed ; the acquisition of knowledge in such science will be greatly facilitated.’

‘ Chemistry consists in the knowledge of certain properties of different species of substances, which properties principally arise from the action of the chemical attraction or affinity of those substances upon one another ; and this attraction takes place either between different kinds of simple substances, or between substances compounded of different kinds of simple bodies.’

‘ The easiest mode of attaining this knowledge is, *first*, to acquire notions of the properties arising from the chemical attraction of *undecom-pounded* substances upon each other ; *secondly*, to acquire notions of the properties arising from the chemical attraction between *compound* bodies and *simple* bodies ; and *lastly*, to acquire notions of the properties arising from the chemical attraction between *compound* substances and *compound* substances.’

‘ These notions relating either to *undecom-pounded* bodies or to bodies *compounded*, it is pro-
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per here to observe, that the most important chemical properties of the *former* arise especially from their *affinities*; and the most important chemical properties of the *latter* arise from their *composition* and their *affinities*: consequently, the terms employed to denote the different substances should, for the *former*, imply chiefly their *affinities*; and for the *latter*, their *composition* and *affinities*.'

The author then gives several instances, which serve to exemplify the advantages to be obtained by the use of terms, which imply the most important properties of the substances, intended to be denoted by these terms:

' There is a substance in the *gaz* state, which is most commonly denoted *VITAL AIR*: now this term implies merely, that this substance is *necessary to life*; but this is not a chemical property; and consequently in chemistry, the term is improper. The most important chemical property of this substance is, that of *producing acid* by uniting with certain other bodies; and therefore the term *OXYGEN*, (which implies this acidifying property), with the addition of the *GAZ*, (which implies the state of elastic fluidity) must excite a more just chemical notion of this substance than the term *VITAL AIR*.'

' Again,

‘ Again, there is a substance popularly known by the term GLAUBER’S SALT, which term barely implies that this substance was discovered, prepared, or used by *Glauber*; but it denotes no distinguishing chemical property whatever. Now the most important chemical property of this substance is, its composition, namely, that it consists of SODA united with SULPHURIC ACID; or of OXYGEN, SULPHUR, and SODA united: for SULPHURIC ACID is compounded of OXYGEN and SULPHUR, and SODA is an undecom-pounded body. Now if the term SULFATE be understood (as in the new system of chemistry) to mean a substance composed of SULPHURIC ACID, and a BASIS which is a METALLIC OXYD, EARTH, or ALKALI; and if it be understood that the term signifying the particular basis is added to denote the particular species of SULFATE, then a just notion of GLAUBER’S SALT, will easily be conveyed and recollected by the term SULFATE OF SODA.’

‘ In proportion to the advances towards per-fection in science, may the language of science be rendered more and more perfect. Things are generally very imperfectly known by those who first observe them, and consequently, in ge-neral, improper names are bestowed by the first observers. The first persons known to have cul-tivated chemistry, were, what we now distinguish
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by the name of ALCHEMISTS, or astrologers, or magicians. They lived in the dark ages of literature, from about the ninth to the fourteenth century. They were but very imperfectly acquainted with the chemical properties of most substances, and from motives of vanity and pride, (and in order to commit frauds) they communicated their knowledge in metaphorical, bombastic, and mystical language. Considerable improvements were made in chemistry during the fifteenth and sixteenth century, and especially the seventeenth century, but the progress of it was far from proportioned to the progress of the other branches of natural philosophy. The *general* properties of material substances had been investigated very fully before the properties arising from the action of *particular* species of substances on certain other species were investigated to any considerable extent. Mayow and Boyle were the only persons in the seventeenth century, who can be truly said to have investigated the chemical properties of substances with a view to the science of chemistry. Newton, however, in the beginning of this century, proposed that many phœnomena of chemistry should be arranged under the head of a peculiar attraction; and in the early part of the present century, Stahl accounted for so many chemical properties from the presence and absence of *phlogiston*, (although an imaginary substance)

that few chemical explanations were given for fifty years afterwards without using the word phlogiston, or words derived from it. Boerhaave, Geoffroy, Lewis, and Cullen, (principally by showing the difference between affinity, or chemical attraction, and mechanical attraction) distinguished clearly the science of chemistry from natural philosophy. Hales, by numerous experiments, made appear that property of many species of matter by which, under different circumstances, they will be either in the gaz or concrete state; which property had been demonstrated, though less extensively, by Mayow and Boyle. The fundamental and important discoveries of carbonic acid and hydrogen gaz, by Black and Cavendish, between the years 1755 and 1766, appear to have been the chief cause of the unparalleled number of new chemical facts found out between the years 1770 and 1780, not only unparalleled by those discovered in any former equal period, but perhaps in any whole century. This rapid progress of chemistry from 1770 to 1780, made the cultivators of it sensible of the many improprieties, absurdities, and barbarisms in its terms, and partial reforms were made by Baumé, Cullen, and others. How unjust, whimsical, and ridiculous, must the names sugar of lead, liver of sulphur, oil of vitriol, butter of antimony, mercurius vitae, luna cornea, microcosmic salt, calomelac,

Iomelas, flowers of benzoin, terra foliata tartari, Glauber's wonderful salt, vital air, caustic alkali, semi-metal, diaphoretic antimony, &c. now appear to every person acquainted with the chemical properties of the substances thus denominated ?

‘ But besides these fantastic denominations, the same term was, in many instances, employed for substances in no respect similar; for instance, calx was employed for oxyd of metal, and quick lime.’

‘ In other instances, the same species of substance was sometimes denominated differently, according to the different matter from which it was prepared; so the same kind of alkaline salt was called salt of tartar, salt of wormwood, pearl ash, pot ash.’

‘ The difficulties to students in chemistry, after the improvements made up to the year 1780, must have been very great, on account of the immense number of facts to be known by terms which did not import the nature of these facts; which terms had no similarity to one another, according to the similarity of the things intended to be signified, and which were often paraphrases or definitions. No general reform of chemical language was proposed till the year

1782, by De Guyton, (*ci-devant De Morveau*) in a “Memoir upon Chemical Denominations, the necessity of improving the system, and the rules for attaining a perfect language.” With this memoir he published a “Table of Chemical Nomenclature, containing the principal analogical denominations, and examples of the formation of compound names.” This table was a system of names agreeably to five principles in the above memoir, namely,

1. That every substance should be denoted by a *name*, and not by a *phrase*:
2. That the names should be given according to the nature of the things intended to be signified.
3. That when the character of the substance is not sufficiently well known to determine the denomination, a name which has no meaning should be preferred to one which might give an erroneous idea.
4. In the choice of new denominations, those which have their roots in the most generally known dead languages should be preferred, in order that the word may be suggested by the sense, and the sense by the word.
5. The

5. The denominations should be arranged with care to suit the genius of the language for which they are proposed.

‘ A more extensive and a better acquaintance with the chemical properties of matter which have occasioned improvements in its language, have also occasioned a new manner of reasoning in chemistry. The experiments of Wilcke, Irwin, Black, and Crawford, (showing that that substance or quality which produces the sensation of heat may exist in most bodies in a state of combination, or analogous to combination, without producing the sensation of heat,) and the experiments principally of Cavendish and Priestley, and perhaps of Mayow and Hales, (showing that different species of rare, elastic, and, for the most part, invisible fluids may very often by combination serve to compose dense solids) furnished the facts which suggested to Lavoisier explanations of phenomena hitherto referred to the hypothetical principle, phlogiston. To those who reasoned according to Lavoisier’s principles, the former language of chemistry was doubly improper, because the import of many of the words was according to the phlogistic hypothesis, and, as hath been already said, the words did not import the most essential properties of the things intended to be signified. To a person who has seen the change of phosphorus and sulphur into the

the acid state by their combination with oxygen, and the reproduction of phosphorus and sulphur by separating oxygen from sulphuric and phosphoric acids, how absurd and erroneous must appear the words dephlogisticated phosphorus and sulphur, and phlogisticated phosphorus and sulphur, used to signify these changes: and how just and significant of the causes of these changes are the words oxygenated phosphorus and sulphur, and def-oxygenated phosphoric and sulphuric acids.

' The new principles of reasoning proposed by Lavoisier, of course occasioned many names to be added to, and many to be discarded from, the chemical Nomenclature of De Guyton and Bergman; because the two last mentioned chemists reasoned upon the principle of phlogiston. Soon after the new nomenclature and new theory of chemistry had been disseminated, mankind sustained a severe misfortune by the death of Bergman, which happened in 1784. De Guyton continuing his labours to improve the language of chemistry, and sensible of the extreme difficulty of rendering it perfect, wisely, in 1787, availed himself of the assistance of the Members of the French Academy. Very probably, it was from his conferences with them that he became a proselyte to the new or antiphlogistic theory. De Guyton was especially assisted by Lavoisier,
Bertholet,

Bertholet, and De Fourcroy; and these four chemists, by their joint labours, have formed a Table of chemical Nomenclature according to the new theory and the principles above-mentioned to have been stated by De Guyton. This table was presented to the Royal Academy of Sciences the 18th of April, 1787, and published in May or June following. For two or three years the chemical table, excepting by the French chemists, was generally censured or neglected; probably because the theory upon which it was founded was not thought to be sufficiently well supported; and because those who possess knowledge are unwilling to be at the trouble of changing the words by which they retain it, however improper those words may be.'

The new system of chemical principles and nomenclature have been most remarkably fortunate in receiving confirmation from almost every new fact discovered since its first publication, particularly with respect to the main facts by which it was originally supported; namely, the composition of water, the composition of acids, especially of the several kinds produced by the combination of oxygen with different proportions of nitrogen, carbon, sulphur, phosphorus, arsenic, &c. and the composition of oxyds. Since the year 1790, the New System of Chemistry, as it is called; and its new language, have been

been very generally adopted. Kirwan, in January 1790, after, as he says, "combating in defence of phlogiston for ten years," lays down his arms; and Black, in the same month of that year, which is a remarkable coincidence, acknowledges that he is a convert to the "new doctrine."

" Although I think I can vindicate the new System of chemical Nomenclature, I must lament, for the sake of medical students, the introduction of the new names in the London Pharmacopœia of 1788, and the Edinburgh Pharmacopœia of 1792. I apprehend that it would have been fortunate if the former names had been continued in use, or if those of the new chemistry had been inserted. Many of these new denominations in the Pharmacopœias, it is true, had been already used by Bergman, and some are formed upon his principles, and denote justly the chemical composition; but the denominations upon these principles, are, in many instances, not given, and in some cases they denote a composition not belonging to the substance. Likewise, many of the terms inserted on the authority of the colleges do not, as Bergman requires, *vere, perspicue, et apte*, import the substances which they are intended to signify. But if the new names had been, according to Bergman's principles, extensively and properly imposed, the insertion of them in place of the former

former names would but have increased the difficulties of students; because in elementary books and lectures, in general, either the denominations of the new nomenclature, or the ancient names only, have been hitherto used.

' I have said that in many instances the names of the Dispensatories of London and Edinburgh do not denote the chemical composition of medicines; as instances, I point out antimonium vitrificatum, which is compounded of oxyd of antimony and sulphur, and sulphur antimonii præcipitatum also compounded of the same substances; crocus antimonii, a compound of oxyd of antimony and sulphur mixed with potash and muriate of soda; flores zinci, a compound of zinc and oxygen; magnesia, a compound consisting of magnesia and carbonic acid; alumen, which consists of sulphuric acid united to alumina; calomelas is compounded of oxyd of mercury and muriatic acid; natron and kali præparatum are compounded of carbonic acid and a peculiar species of alkaline salt; flores benzöes are an acid.

' I have said that in these Pharmacopœias some terms have been erroneously imposed, for they signify a different composition from the composition of the medicines they denote, as in the instance of the hydrargyrus nitratus rüber; in

which I can discover no nitrous acid, as its name implies, but merely oxygen and mercury; and sulphur antimonii præcipitatum, which is not sulphur precipitated from antimony, but a compound consisting of oxyd of antimony united to sulphur, and which is therefore called, in the new system, sulphurated antimonial oxyd.

I have affirmed also that many of the names inserted for the first time on the authority of the colleges of London and Edinburgh do not convey a just meaning of the substances which they should signify. The word kali, hitherto used to signify the plant whose ashes contain a species of alkaline salt, which by uniting with acidulous tartrite of potash serves to compose the salt popularly known by the name Rochelle salt, in the London Pharmacopœia signifies a totally different species of alkaline salt, namely, that which, by uniting to acidulous tartrite of potash, produces tartrite of potash or soluble tarçar. The substance named kali is composed of carbonic acid and a peculiar alkaline salt, which composition is not implied by this name. In this instance too, the rule that new names shall not be introduced unnecessarily is violated, for those already in use, viz. potash, vegetable alkali, &c. were at least as proper as those newly introduced. The name lixiva, in the Edinburgh Pharmacopœia, inserted to signify the species of alkali just mentioned

mentioned to be signified by the name of kali, is from the words lix and lixiva, and lixivium, used by Pliny to signify a ley or solution in water of the saline matter of ashes of fuel. This name lixiva cannot surely with propriety be used to denote the substance intended to be signified by it, viz. a compound consisting of carbonic acid and a peculiar species of alkaline salt.

' The word natron in the London Pharmacopœia not only does not denote the composition of the substance, which substance is compounded of the carbonic acid and a peculiar species of alkaline salt, but it is corruption of the word *Nitrum*, or nitrum, and this word should have been again brought into use if it was thought to be a proper denomination for the compound of carbonic acid and alkali. It does not, however, seem proper to introduce this name even with the original orthography, not only for the reason just mentioned, but because, ever since the discovery of gunpowder, the word nitrum has signified a salt which contains an acid called nitrous acid. The word nitrum also should not have been used, as other names already well understood might have been chosen, namely, soda, fossile alkali,' &c.

Dr. Pearson next proceeds to the explanation of the *Table* of chemical Nomenclature of the

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French

French Academicians ; and to point out the *alterations* which he has ventured to make, and the *additions* which he thought useful. These can only be understood from a perusal of the work itself.

To the work is subjoined a postscript containing an answer to some objections made by Dr. Priestley to the new chemical doctrines, from which it appears, that Dr. Priestley is not yet a convert to the new system.

We cannot quit the work of Dr. Pearson, without recommending it to the notice of our readers, as containing a clear and comprehensive view of the important alterations, which chemistry has undergone, within a few years ; the study of which, it cannot fail in a high degree to facilitate.

XXVII.

Asclepiadii Bythini Fragmenta. Digest & curavit
 C. G. Gumpert, M. & Ch. D. Præfatus est
 D. Christ. G. Gruner. Vinariæ, 1794. Boo-
 sey, London, 3s. 6d.

WE are here presented by the learned au-
 thor with an account of the Life and
 Writings of the most celebrated physician of his
 time. He has with great diligence collected
 from various sources all the information that is to
 be obtained on a subject of so remote a period.

It appears that there have been several of this name (*Asclepiades*) and some of considerable emi-
 nence in the art of medicine. In the writings
 of the antient authors we find numerous instances
 of this. The whole order of priests that offici-
 ated in the temples dedicated to *Æsculapius* were
 denominated *Asclepiades*. This name was also
 commonly given to those who adopted the doc-
 trines of *Asclepiades* after his time. But setting
 aside these, we find several of the same name in
 the following age, who were practitioners in the
 art of medicine, who had no relation with the one
 whose works we are here presented with.

The

The first of the name we meet with is *Asclepiades Pharmacion*, so called on account of his having applied himself to the description, composition, and mode of administering medicaments. He appears to have lived about the time of Nero or Domitian. Galen mentions his having written ten books, *De Medicamentis*.

Arruntius Sempronianus Asclepiades is another, whose name has been preserved from oblivion only by an inscription on a stone, found in the *Nomentane Way*, as follows: L. ARRVNTIO SEMPRONIANO ASCLEPIADI IMP. DOMITIANI MEDICO T. F. I.

Amongst others, *Calpurnius Asclepiades* holds a distinguished place. He lived in the reign of *Trajan*. The following inscription shews the estimation he was held in — C. CALPVRNIVS ASCLEPIADES PRVSA AD OLYMPVM MEDICVS PARENTIBVS ET SIBI ET FRATRIBVS CIVITATES VII A DIVO TRAJANO IMPETRAVIT NATVS III NONAS MARTIAS DOMITIANO XIII COS, etc.

Asclepiades Philophysicus. Galen speaks of another physician of this name; who, from his study of natural history, obtained the appellation of *Philophysicus*.

T. *Aelius*

T. Ælius Asclepiades. We owe the memory of this man to a stone, which was dug up near the amphitheatre at Rome, bearing this inscription: T. ΑΙΛΙΟΣ ΑΣΚΛΗΠΙΑΔΗΣ ΙΑΤΡΟΣ ΛΟΤΔ. ΜΑΤ. ΧΕΙΡ. i. e. *Medicus matutini ludi chirurgus.*

P. Numitorius Asclepiades, a physician and oculist of Verona, and chief of the equestrian order.

L. Scribonius Asclepiades, of whom we have the following inscription:—SCRIBONIÆ JVCVN-CÆ L. SCRIBONIVS ASCLEPIADES VXORI STATVIT.

Cœlius Aurelianûs mentions another under the name of *Asclepiades Titiensis.*

Asclepiades Apollonii Filius. We derive our knowledge of this man from a stone dug up at Smyrna:

Asclepiades Ephesus, is another of this name.

Others of the name have been recorded, but it is probable that they have been some or other of those above enumerated.

The most eminent of the name by far, is the one whose works are here brought before us, viz. *Asclepiades Bithynus.* He was a native of *Prusa,* a city

a city of Bithynia in Asia. Of the exact period of his birth, his parentage, of his youth, and of his studies, or teachers, we know nothing. All we know is, that he travelled through *Parium*, a capital town of *Mysia*, by the way of the *Hellef-pont* to Athens, where he made some stay; in which places he practised his art and made several of his observations, some of which have been handed to us by *Cælius Aurelianus*. He then betook himself to Rome, where he tarried to the end of his life. He lived to a great age, and practised in his profession with the greatest celebrity. The period of his coming to Rome, and the time of his death cannot be exactly ascertained; it was, however, in the seventh century, u.c. in the reign of Pompey the Great.

He was not long at Rome before he obtained a very high degree of fame, as well on account of his medical and philosophical skill, as of his eloquence and prudence, by which he rendered himself sought after by all. Before the time of Asclepiades the Romans looked on the art of medicine, as practised by the Greek physicians, with contempt. He had the merit of rendering the art highly acceptable to the citizens of Rome.

A convincing proof of the estimation he was held in, by foreigners as well as his own countrymen,

trymen, is afforded in the pressing invitation that was given him, with the most advantageous offers, by Mithridates, king of Bithynia, a man not more remarkable for his regal qualities, than for his literary abilities. But Asclepiades, courted at Rome, and attached by the strong ties of friendship and familiarity, with the most excellent men of his time, refused to listen to the tempting offers that were made to him. He died full of honours in a very advanced age, and had the very singular felicity of passing a long life, totally free from every kind of infirmity. His death at length was accidental.

The following is a list of his works.

De communibus adjutoriis.

Περὶ ἀλωπεξίας.

Περὶ ἀραινοῦς καὶ τῶν σφυγμῶν βιβλίον.

De Clysteribus.

Περὶ ελαχῶν.

De periodicis febribus.

Liber de finibus.

In obscuriores Hippocratis libros scripsit.

Libros scripsit explanatorios aphorismorum Hippocratis.

De Hydropoe,

De lue (cardiaco),

Ad Mithridatem Asclepiades cum sollicitatus ex urbe Roma, præcepta pro se mitteret.

Ad Erasistratum libri parascevastici.

Libri tres de celeribus, sive acutis passionibus.

De Pulsibus.

Libri Salutarium ad Geminum.

De tuenda Sanitate.

Περὶ σοι χειῶν.

De vini datione.

Of several of these, we possess nothing but the titles. The present work contains only the fragments, and an account of his doctrines collected from other writers of that period. We do not think it necessary to give a translation of any of the pieces here given : they are capable of affording very little instruction to practitioners at present.

present. He was an opposer of the doctrines of Hippocrates with regard to critical days and the powers of nature. His philosophy was the corpuscularian.

XXVIII.

J. A. SCHMIDT, Chir. Doct. Prim. Lin. Anat.
Vindobonæ. Profess. &c. &c. *Commentarius
de Nervis Lumbaribus, Eorumque plexu Anato-
mico-Pathologicus.* Vienna, 1794. 4to. p. 118.
Boosey, London.

THE distinguished rank Professor Schmidt holds in his own country, as a Surgeon and Anatomist, naturally leads one to expect much valuable information, when he favours the public with his observations. We have no doubt that, in the present case, such expectations will be fully answered. The work before us exhibits striking proofs of anatomical accuracy, and of judicious observation. Much had been before done in the field our author has here chosen, but much likewise remained to be done, to render the subject perfect. Indeed, the whole of this

part of medicine is involved in great obscurity, and every attempt at illustration, is attended with proportionable difficulty. The labour of dissection in this branch of anatomy, is sufficient to deter men, less arduous in the pursuit of their object, from the investigation of the subject; whilst the physiological and pathological consideration of the functions of the nervous system, call for extraordinary exercise of the judgment, to avoid being led away by speculative and useless theory.

Professor Schmidt observes in his Introduction, that some one particular individual nerve, has employed the knife and pen of many celebrated anatomists. Thus, the great sympathetic nerve, *nervus sympathicus magnus*, has been described, by several of the older anatomists; and, amongst the moderns, by Camper and Walter. In like manner, the *nervus spinalis ad oclavum par accessorius* was described by Galen, Vesalius and Fallopius, then by Volcherus, Coitar, Willis, Aschius, Lobsteinius, and Scarpa. Whilst the crural nerve (*femoralis magnus s. anterior Halleri*) had been neglected from the time of Vesalius, Eustachius, and Fallopius, to the time of Winslow and Sabatier. Being employed in the winter of the year 1789, in dissecting the lumbar nerves for the use of his public lectures, Professor Schmidt discovered, that the descriptions of some authors did not, in many respects, correspond

spond with the order of nature. In comparing in chronological order, the observations of ancient and modern writers, with his own observations, he found that they differed exceedingly, not only from one another, but all of them, in several respects, from what really appears in the natural state. He thought it therefore proper to investigate the subject himself, with the requisite attention, and the fruit of his observations are here presented to the public. The descriptions are illustrated by drawings, which the learned author spared no pains to have as accurately executed as possible. He gives us an historical account of the lumbar nerves, and their distribution, with the corresponding dates of the discoveries that have been made on this subject, by different anatomists ; subjoining his own observations at the end of each section.

It is not possible to give an abridgment of the descriptive part of the work ; we shall therefore confine ourselves to the pathological and practical observations, which arise out of the former part. All the phenomena which depend on nervous sympathy, are here endeavoured to be explained and referred to the distribution of the nerves, as pointed out in the work. The methods of treatment which the author recommends are also explained on the same grounds of the origin and communication of those nerves.

He

He first speaks of the symptoms arising from fractures of the vertebrae, and recites the case of a young man, who, from falling with violence on his back, was affected in the following manner: He could neither stand, nor was he able at all to move the lower extremities. The thighs being brought together presently fell asunder again. All feeling was immediately lost in the right thigh. Four and twenty hours after the accident, the natural heat of the right extremity was totally extinct, and that of the left much diminished. The scrotum was relaxed and pendulous. From the first, the urine and faeces were suppressed. On the fifth day an oedematous tumor attacked the lower limbs and nates. On the seventh day, a sphacelus came on without pain, which entirely denudated the outer surface of the ilium and sacrum. On the twelfth day, death took place. On dissection, the first of the lumbar vertebrae was found driven inwards with a fracture of the transverse processes of the first and second lumbar vertebrae. From a consideration of the injury done to these parts, the explanation of the symptoms will readily occur. From the displacement of the body of the vertebra inwards, compression of the medulla spinalis must necessarily take place; the great sympathetic nerve be put on the stretch; and the first and second branches of communication of the lumbar nerves be removed from their natural situation; hence,

the

the nervous energy must be destroyed of all those parts which derive their nerves from the lumbar and sacral trunks; hence too, the impeded action of the nerves in remote parts, which have any communication with the great sympathetic nerve.

On the subject of the paralysis of the extremities arising from a caries of the vertebræ, our author differs, in some respects, from the opinions of our celebrated countryman Pott. Mr. Pott supposed that the paralysis of the lower extremities arose from the caries (or rather from the cause which induced the caries) of the body of the vertebra, without any injury to the medulla spinalis; and asserted, that the subsequent incurvation of the spine was the effect of the same cause, to wit, the cause of the caries; he denied that the curvature and consequent compression of the medulla spinalis was the cause of the paralytic symptoms. The cause of the caries he supposed to be a scrophulous taint in the system; and attributed the good effects of the caustics to the suppuration which was thereby induced. But our author considers it as very singular, in the observations of Mr. Pott, that the inferior extremities should be always affected, and the superior never, although the disease were situated in the vertebræ of the back or neck. He does not attempt to call in question the fidelity

lity of any of the facts recorded by Mr. Pott, either with relation to the history and progress of the disease, or the appearances after death, or the effects of the treatment adopted; his own experience on the contrary, confirms the truth of them. But he would explain the *ratio symptomatum*, and the *methodus curandi* on other principles.

He examines the phænomena of the disease as described by Mr. Pott himself. The inability to move the inferior extremities, comes on gradually, as does also the incurvation of the spine; the muscles lose their strength, and become rigid, as if affected with a tonic spasm. But before this happens, the patient becomes less lively; he tires on the smallest exertion; he frequently witters, and crosses his legs involuntarily, and often falls down; and he complains of pain in his legs. If the curvature be in the neck, the head falls forwards over the breast, the infant being unable to support it.—If the back be affected, more general symptoms take place; the appetite is lost; there is a dry and irritating cough; difficult respiration; quickness of pulse; tendency to atrophy; a sense of pain and oppression in the stomach; in a word, all the symptoms which can arise from an impeded digestion.

But

But if the curvature be seated in the lumbar region, an involuntary excretion of the urine and fæces follows; ascites and tympanites with paralysis of the lower extremities, and the patient dies.—Can there be any doubt that these symptoms arise from an interruption of the nervous power? Ford and Parke have both observed, that the superior, as well as inferior extremities, are sometimes affected. If we consider, that in this disease the spongy substance of the bodies of the vertebræ becomes carious always from before backwards, and that the superincumbent bodies of the superior vertebræ must descend, in proportion as the caries advances, we readily perceive the way in which the curvature takes place. But that the substance of the medulla spinalis should not be compressed in consequence, is highly improbable. The comparison which Mr. Pott makes in illustration of his opinion, with a gibbous body, does not apply; as the circumstances of the two bodies are so dissimilar. Although we should allow the analogy, still is it not likely that the medulla spinalis would be irritated from being so distorted from its right direction? Is it possible that the body of the vertebræ, especially those of the loins, should be destroyed by caries, without injury to the great sympathetic nerve? Can such a moist corruption of the bones take place in this region without affecting the neighbouring parts by the

ichor which accompanies it? Did ever a patient recover, where it was known by indubitable signs, that a true caries of the bodies of the vertebræ was present? Are the spongy bodies of the vertebræ liable to become enlarged from rickets or scrophula, in the same way that is frequently observed in the more dry, and less spongy extremities of the bones of the limbs? If this can take place, may not the more gentle and gradually increasing pressure of the medulla spinalis and great sympathetic nerve, induce debility of the extremities, and all the different symptoms, before the curvature of the spine is sensibly perceived, especially as Mr. Pott himself remarks, that this weakness of the limbs comes on previous to any manifest incurvation of the spine? Is it not probable, that in this period of the disease only, are the effects of artificial ulcers in the back to be looked for? For, how, says our author, can a cure be expected from an ulcer in the surface of the back, made by art, in a deep seated caries of the bodies of the vertebræ? Who ever expects such effects from ulceration in the vicinity of carious bones in other parts? Can it be supposed that the lymphatics absorb the dissolved osseous matter, and transmit it to those ulcers on the surface? In fact, have not the lymphatics of this part a totally different course?—In these and many more questions, which he has omitted, are contained the author's doubts of the truth of Mr. Pott's opinions on the

seat,

seat, effects, and removal of the disease in question. He is of opinion, that the good effects of the remedy are to be expected only if the morbid cause, whether scrophulous or ricketty, has not occasioned any destruction of parts; when the caries has not taken place, or, at least, has but just commenced; when the moist spongy bodies of the vertebræ are merely tumefied and enlarged by the disease; but by no means, if the disease has taken deeper root. But that the good effects are to be attributed to the suppuration merely, is much doubted by Professor Schmidt. He attributes more to the stimulus excited on the adjoining nerves, than to the simple discharge of purulent matter.

The difference in opinion between Mr. Pott and our author, does not appear to us of great moment. Whilst it is admitted on all hands, that the remedy in question is capable of producing the best effects, it is a matter of secondary and inferior consideration, which of the two is right in their idea of its mode of operation. Mr. Pott supposed that the symptoms were not owing to any pressure on the medulla spinalis, in consequence of the curvature of the spine. In his first edition he had said, that the bodies of the vertebræ became enlarged, and the ligaments and cartilages thickened, previous to the caries taking place. In the last edition, however, he says he was mis-

taken in this idea, and that no such enlargement does in reality take place. That no such enlargement could be perceived on dissection we readily believe, because he asserts it from his own observation; but that no thickening or enlargement of those parts takes place at the commencement of the disease, is certainly not proved, for in this state of the disease, we can very rarely have ocular inspection of the parts.

We know that in scrophula and rickets such enlargements of the bones do take place, and Mr. Pott himself attributes the disease of the spine to a scrophulous affection. A certain degree of inflammation in bones (and inflammation must precede caries or suppuration) is always attended with an increase of their substance. We are therefore of opinion, with Professor Schmidt, that the symptoms are partly to be attributed to pressure on the spinal marrow, and partly to irritation from the displacement of the nerves which run in the course of the spine; which displacement is the natural consequence of any alteration of form in the bodies of the vertebræ.

With regard to what the author says on the mode of operation of the remedy, we consider it as exceedingly trivial. There is no reason from his works to suppose, that Mr. P. thought he was evacuating morbid matter from the surface of the ulcers,

ulcers, and by that means producing a cure; the *modus operandi* he has not at all gone into. The opinion of Professor Schmidt, that caustics cannot effect a cure, when caries has actually taken place, is certainly contradicted by the facts which Mr. Pott has adduced. We may ask, in what manner can a curvature of the spine take place without a caries or destruction of the bodies of the vertebræ, or at least of the intervertebral cartilages? Yet cures have frequently been effected where the curvature has been very considerable. That caustics operate in the cure of the disease through the medium of the nerves, and not simply by the evacuation that is induced, we readily admit with our author; but Mr. Pott has said nothing from which we can infer that he held a different opinion.

We are next presented with a case of hemiplegia, which was entirely cured by the repeated application of a blister for the space of three weeks, along the course of the spine, from the neck to the sacrum. The good effects are attributed to the stimulus applied to the posterior branches of the spinal nerves.

Animadversiones in hernias incarceratas a spasmo.
The author is of opinion that a stricture on the contents of a hernial sac sometimes is occasioned by a spasmodic contraction of the muscles of the abdomen,

abdomen, straitening the ring of the tendon in the oblique muscles. On this idea, he recommends opium and other antispasmodic remedies. But we must remark, that where inflammation is produced in the intestine, in consequence of the stricture, although this may arise from a spasmodic contraction of the abdominal muscles, opium is a very doubtful remedy, and the general use of spasmodics may be extremely prejudicial.

Some other phœnomena arising from the consent of parts in gravid women, in hydrocele, saccocèle, &c. are noticed, and explained on a knowledge of the distribution of the nerves; together with a few other pathological observations of less importance. Upon the whole, in an anatomical point of view, we consider the present as a very valuable publication.

XXIX.

Physiological Researches into the most important Parts of the Animal Economy. By Benjamin Humpage. 8vo. p. 282. 5s. 6d. London, 1794, Murray.

THE contents of the present work will best appear from the author's review at the end of the work, of the principal points which he wishes to inculcate. These are

‘ That the lymphatic system does not arise from cavities and surfaces, nor does it terminate in the thoracic duct, as is the general received opinion; but that it originates from the heart, and terminates in all surfaces and cavities with which they themselves are formed, by an extension of the lymphatic system.’

‘ That the lymphatics and lacteals are separate and distinct systems; the lacteals terminating in the thoracic duct, conveying chyle *into* the blood; whereas the lymphatics separate lymph *from* the blood, and distribute it to every part of the body.’

‘ That

‘ That the lymphatic glands are for the separation of the lymph from the blood; that they are simply composed of arteries convoluted, which form the glands; that the same vessels, as soon as they come out of the gland, divide into innumerable anastomosing branches, and form a system of lymphatic vessels; and that there is by means of this organization, a direct natural passage or communication *from and into, the blood vessels, in every part of the body.*’

‘ That transfudation does not take place either in the living or dead body, but that every thing we observe in it, is the operation and effect of parts appointed to produce them, and performed by organization alone.’

‘ That the blood is a compound fluid, peculiarly adapted to let certain parts of it pass through the glands; and the glands are so formed, as to prevent the red globules of blood, necessary to be confined in the blood vessels, from passing through them.’

‘ That absorption is not performed by the red veins, but by the lymphatics, when from exercise, fatigue, or inanition, they become empty; and, in that state, they constitute a system of absorbents, conveying fluids into the blood from every part of the body.’

‘ That

‘ That ligatures on the blood vessels are not the cause of the lymphatic vessels being filled with lymph, by obstructing its passage into the thoracic duct, but that the lymph passes through the lymphatic glands into the lymphatic vessels.

‘ That as soon as the lacteals are filled with chyle, they appear white, for when there has been a quantity of chyle conveyed into the blood, sufficient to cause a separation of the lymph from the blood, the LACTEALS are to be seen conveying WHITE CHYLE, and the LYMPHATICS filled with CLEAR TRANSPARENT LYMPH; and when all the chyle is conveyed into the blood, then the lymphatics only are to be seen, and not the lacteals.

‘ That the lymph, deprived of its nutritious particles, is a mere water; that it only derives its different degrees of consistence from its being impregnated with the quality and quantity of our food, whereby it is constantly liable to change; and equally so when diseased; from these circumstances, it may have all the appearances which different authors have attributed to it; that it is universally extended throughout the body, and that it is the immediate cause of nutrition.

‘ That what is commonly called *simple pus*, is the *lymph altered*; and that the discharge from ulcers arising from various complaints, is the *lymph diseased*, so that it partakes of the nature of the disorder, and is *changed* from the *mildest, simple, inoffensive* fluid into the most *corrosive, malignant, or putrid* one, which destroys, in many instances, every thing it touches.

‘ That the brain and its continuations, are *not nerves*, as has always been the generally received opinion, but that it is merely a *lymphatic gland*; and its continuations not nerves, but lymphatic vessels. That it does not possess any greater degree of *sensation*, than any other gland in the body; is not the seat of sensation, and only forms a part of the lymphatic system.

‘ That *sensation* wholly resides in the *cerebellum* and *medulla spinalis*; and that *no nerves exist* but what originate from them; that the brain and its excretory ducts are only united to them, to supply lymph for their nutrition, in the same manner as other parts are supplied by their contiguous lymphatic glands and investing vessels throughout the animal œconomy.’

The reader will probably startle at the novelty of these doctrines, and will no doubt be curious to enquire, what are the grounds on which the

author

author has brought forward so many *revolutionary* propositions. These we shall examine in order.

The author sets out with shewing, what are the present opinions concerning the lymphatic system; and afterwards endeavours to demonstrate that they are not founded in truth. Haller, Monro, Hunter, Hewson, Cruikshanks, &c. &c. thought that they could demonstrate, that the lymphatic system consisted of three parts, the lacteals, the lymphatic vessels, properly so called, and the thoracic duct: and that the sole function this system performed, was that of absorption. All this is controverted by our author. The weight of his arguments the reader will judge of.

From the difficulty of filling the lymphatics by injecting the arteries or veins, it is generally concluded, that the lymphatics are not arising from the arteries or veins, but that they arise from the surfaces and cavities of the body; and that when accidentally the lymphatics are filled by injecting the blood vessels, that this is owing to extravasation having previously taken place. This is denied by Mr. H. not on any kind of demonstrative evidence, but on grounds merely presumptive. He denies that the lymphatics terminate in the thoracic duct: not that he has traced them elsewhere, for he does not call in anatomy to his aid, which, to us, appears to be

the only way of deciding questions of this kind, which admit of a considerable degree of demonstrative evidence.

That the lymphatics do not terminate in the thoracic duct he infers, first, from the observation, that glands in general have excretory ducts to convey their fluids from the blood, to the various parts of the body, to which they are destined.—‘ Why, says he, should we reverse this general order, and assert that the lymphatic and lacteal vessels pass through such a multitude of glands as are dispersed throughout the body, in order, at last, to get at the thoracic duct, to convey fluids into the blood; when we know that all the glands, whose uses are at present known, are to convey fluids *from*, and not *into*, the blood?’

2d. From considering the action of poisons—
 ‘ If we consider the thoracic duct as the trunk, or termination of the absorbing system, and that there is no passage for these absorbed poisons into the blood, except through the thoracic duct, it would be certainly fair to infer, that the thoracic duct should itself be subject to the same or similar diseases, to which the other parts of the system are liable; but this does not take place.’—
 3d. ‘ It frequently happens,’ says Mr. H. ‘ that matter is carried from the head to the extremities,

ties, and that this cannot be explained on the present system.' — It certainly cannot, nor do we believe the fact.—4th. ' The thoracic duct cannot be the trunk of the absorbent system, from the smallness of its size. 5th. ' The injecting of mercury, water, air, &c. from the blood vessels into the lymphatics, in most parts of the body, demonstrates, that the lymphatics do not terminate in the thoracic duct.' — We have not room to point out the little weight these arguments have, in overturning the received opinions; it must strike every reader.

The office of the lymphatic and lacteal systems is denied to be the same, differing only as to the nature of the fluids they absorb.—1st. He says, ' There are many lacteals which go to the thoracic duct, without entering any glands.' 2d. ' If the lymphatics and lacteals were the same, they should absorb the same fluid from the intestines, which they certainly do not, as the lymphatics of the intestines may be seen filled with a clear fluid, at the time the lacteals are filled with a milky fluid.' 3d. ' It frequently happens in scrophula, lues venerea, consumptions, &c. that the greatest part of the lymphatic glands in the abdomen, are obstructed, indurated, schirrous, and sometimes in a state of suppuration. Now, if the lacteals passed through these glands, in their way to the thoracic duct, as authors assert,

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it would appear evident, that the chyle would be prevented from passing through these indurated and diseased glands.'—To this we answer, that there is no proof of induration and enlargement of glands being attended with obstruction, nor is it in any degree probable.

The author next proceeds to *demonstrate the use of the lymphatic glands*. This he determines to be for the purpose of separating the lymph from the blood, and that the lymphatic vessels are excretory ducts to the lymphatic glands. Nothing like a proof of all this is offered. One would have thought that the valvular structure of the lymphatics, would have been sufficient argument against his hypothesis.

The following is the author's "*Introduction and Demonstration of the new lymphatic System.*"

' It has been usual for anatomists to take the origin of lymphatic system from the different cavities and surfaces of the body: but I shall take mine from the heart, as its proper origin.

' This system is extremely simple, it arises merely from an extension of arteries: to illustrate what I mean, suppose, for example, we take the branch of an artery; (and I wish it to be understood to apply to the whole of the arterial system) a branch of the aorta for instance;

we cannot trace this artery to its termination. This being admitted, we can trace the artery until it becomes extremely small in many parts of the body, and its coats are thin in proportion, so that they frequently appear transparent when they are filled with red blood. Now, let us set out from the aorta again, and we may observe, that in tracing this artery, it gives out in its passage, various anastomosing branches, from which we can trace them, running into and forming convolutions, or what we commonly call *lymphatic glands*; and this system is observed in great abundance throughout the body. Hence arises the impossibility of tracing them as *arteries*, to their termination; because, after they have formed convolutions or glands, they do not convey red blood, as it cannot be admitted *through* the glands, whilst the body is in health, but after these glands are so formed by the artery, *the artery then divides, anastomoses, and the same vessel immediately becomes a system of lymphatic vessels*; which, as they extend, become so extremely minute, as not to be possibly distinguished by the naked eye; and in this state they unite, and form the different parts of the body; such for instance, as the periosteum, pleura, mediastinum, peritoneum, adipose membrane, cutis, &c. as well as several other parts of the body, which do not contain red blood.'— Can this need confutation!

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'That the office of the lymphatic glands is that of secreting lymph for the nourishment and growth of the body, is apparent, the author thinks, from several diseases. ' For instance; suppose a person affected with a white swelling of the knee, a disorder which is produced by an obstruction of the lymphatic glands; we may observe the limb waste and daily diminish.'—'The blood of persons who have had consumptions, when in an advanced state, is always found to have a strong size; this is produced by the lymphatic glands being obstructed, so that the lymph confined in the blood vessels, which become violently distended, and cause such an oppression in the lungs, as to threaten suffocation.'—'The lues venerea, scophula, spina ventosa, &c. in their advanced state, arise from a disease or obstruction of the lymphatic glands, in a similar manner to obstructions.'

Having denied the commonly received opinion of the origin of the lymphatic system, it might have been expected that the author would have also taken from it its office of absorption; but this is not the case.—' It appears, from what has been already advanced, that the lymphatic system is composed of vessels, conveying the lymph through the lymphatic glands, from the blood vessels to all parts of the body, for the important purpose of repairing the loss that is continually made; but

that

that is only one part of their office ; for when this system has performed its office of conveying the lymph, and the lost parts are repaired, which is done by repetition ; they afterwards become mere empty tubes, and when in such a state, they become a system of absorbents : for it can not be supposed, that fluids conveyed from the blood, and those that are carried into the blood, by absorption, diametrically opposite to each other, can be conveyed in contrary directions in the same vessels, and at the same time.'

Chap. 4, *The use of the valves demonstrated.* — The generally received opinion of the use of the valves, is that of their preventing a retrograde motion of the fluids in any vessel. But this, our author says, is merely imaginary ; an hypothesis without a single argument or experiment to support it. He has discovered that their real use is diametrically opposite to that of the prevailing opinion, and that it is to resist an impelling force. — Amongst other curious arguments in support of this, the author says.—‘ The valves in the veins are for the purpose of resisting the force of the blood, propelled by the heart and arteries ; and if we inject the veins from the arteries, with a force no greater than that with which the blood circulates in living animals, the valves will make so great a resistance, as to force part of the injection through the lymphatic vessels and glands

into the cellular membrane.'—'On the contrary, if the arteries be injected from the veins, the valves will make no resistance, and readily let the injection pass into the arteries.'—

The author considers the brain as a mere lymphatic gland, which is only connected with, and forms a part of the general lymphatic system; so that a gland situated in any other part, is a brain to such part, and its office the same.

It would be an endless task to enter into a particular confutation of all the authors positions.—The practical *inferences* which he draws are not less extraordinary than his doctrines. We think it sufficient to have stated a few of the passages. The reader will draw his own conclusion.

XXX.

IDELER. *Med. Doct: De Crisi Morborum.* Edidit Hebenstreit. Doct. & Prof. Lips. Thoruni, 1794. 8vo. p. 188. Boosey, London.

THE doctrine of crises and critical days, first promulgated by Hippocrates, and adopted by his followers, has yet frequently met with

with no small degree of opposition, from his own time to the present. The first who disputed the truth of his observations on this subject was Asclepiades, and he has been followed by Celsus, and a great variety of other authors, since that period. That the actions of the body, both healthy and diseased, have a tendency to observe certain periods, and to go through a certain progress, we think there is abundant proof. Whether this however, goes to the extent that many have supposed, may reasonably be doubted. A great variety of circumstances may interrupt, or altogether prevent the occurrence of these appearances, but the general tendency is not on this account the less evident. At the same time, we must allow, that every attempt that has hitherto been made to explain this law of nature has been fruitless. Our author espouses strenuously the Hippocratic doctrines, which he has supported by a variety of weighty arguments.

He observes, that we have the testimony, founded on observation and experience, of the most celebrated men in favour of the doctrine of crises and critical days: for instance *Bordevius*,—*Van Swieten*—*Kloeckhof*—*De Haen*—*Schmidt*—*Habenstreit*—*Gruner*, and others. Amongst the ancients *Asclepiades* and his disciples, together with *Celsus*, treated this with contempt; and afterwards the sect of chemists endeavoured to over-

turn the doctrine of Hippocrates, though founded on the most diligent and attentive observation, not only of Hippocrates himself, but of several of the most celebrated of his followers. The bombast of Van Helmont was sufficient to outweigh the experience and observation of the old writers, though supported by several of the most eminent contemporary practitioners, *v.g.* Arnold de Villanova and Theophrastus Paracelsus. At length Baglivi arose, who pointed out the absurdities that had crept into the science of medicine from the improper application of chemical principles to the human body, and restored the authority of the Hippocratic doctrines to their former dignity. Notwithstanding, after his time, there were many physicians, who dissented from his opinions, or rejected them altogether, or at least, hesitated with regard to the truth of them. The causes of their ambiguity are, probably, first, the imperfect way in which the books of Hippocrates were perused, and hence a misconception and misrepresentation of the doctrines themselves were the consequence. On a careful examination of his works it will appear, that he by no means spoke of crisis with so much certainty, as to hold, that the crisis of this or that disease must invariably take place on a particular day. Many examples are adduced by himself, where the crisis had been anticipated or retarded for some days. Another cause of mistake has arisen from

from inattention to accidental causes, in the method of treatment, the structure of the body, temperament, season, and other circumstances, perhaps also in the peculiar state of the organ, concerning which the future judgment is to be formed ; and it is easy to see that all these things either separately or in conjunction, are sufficient to change the time and mode of the crisis.

Mead, Pechlin, Sylvius de le Boë, Pitcairn, Macbride, Glass and others reject the doctrine of critical days either *in toto*, or so far, that they contend that diseases of cold climates do not observe the same order with those of warmer regions, as pointed out by Hippocrates. This opinion however is contradicted by the observations of the most celebrated practitioners. For Galen, Duretus, Baillovius, Sennertus, Hollerius, Riverius, Laurentius, Sydenham, Baglivi, Hoffman, Ballonius, Boerhaave, Freind, Gorter, Senac, Morton, Wintringham, Muschenbrook. Martin, Nihell, Pringle, Quesnay, Lorry, Stahl, Zimmerman. and, in our own times, the venerable Cullen abundantly confirm the old doctrine; more especially as these men lived in a great variety of situations and climates, and directed their observations particularly to the investigation of the nature and progress of diseases. From all which our author does not hesitate to conclude that the periods of diseases, their

their progress, duration, crisis, and termination are governed by stated laws, equally with the motions of the heavenly bodies, the maturation of fruits, &c. and that diseases themselves of the same climate, are constantly observed to be similar to one another, although they differ in the degrees of vehemence in different regions. The truth of all this appears to be confirmed from consideration of the following arguments.

1st. The history of diseases shows us, that the same order, as to crises and critical days, takes place in all acute diseases, except in those of a putrid nature, and especially in those persons who live a simple natural life; whilst in those of a malignant and erysipelatous nature the order of them is uncertain and undetermined.

2d. In warm climates the same order of crises and critical days is observed at the present day, as appears from observations made by practitioners in those regions.

3d. The less frequent occurrence of crisis may be attributed often to the method of cure, by which the natural efforts are disturbed. Thus great evacuations whether by bleeding or other ways, and long fasting, tend to prolong the duration of diseases, and to vary their periods. Thus in like manner, accidental circumstances arising in

in the course of diseases, such as errors in regimen, and especially passions of the mind, the ill effects of which in disturbing the progress of diseases Hippocrates points out and laments, have undoubtedly given rise to much ambiguity on this subject.

4. In the computation of critical days, a frequent cause of error or uncertainty, is the inattention and negligence of the patient or bystander, who are unacquainted with the nature and commencement of the disease.

5. A great number of phenomena shew us, that both in the sound state and the diseased, nature has a tendency to observe certain periods, as remarked by Cullen, de Neuville, and many others. For instance, the vicissitudes of sleep and watching, occurring with such regularity to every one; and other states of the body at every age, especially at the time of puberty; the accurate periods, that the menstrual flux observes; and the exact time of pregnancy in all healthy viviparous, and in some oviparous animals, all prove this law. In the eruption of the Catamenia, the disposition of nature to particular periods is so strong that unless occasional causes interrupt this tendency, the eruption often happens on the same day, and the quantity and duration are exactly the same, at the different periods.

Every

Every woman almost has her peculiar time of the month, her peculiar quantity and duration; all which however vary according to the structure of the body, the temperament, mode of life, and climate; yet they continue in each in the same state as long as health continues.

The hæmorrhoidal flux, in either sex, observes the same exactness in the periods. With respect to diseases, there is no one but must observe the definite periods which take place in regular intermittents as well those universal, as topical; in the course of true inflammation which at the fourth, or at farthest, the seventh day, is resolved, or after this period changes into abscess, gangrene, or schirrus; in exanthematous eruptions, which if they are favourable, and regular, appear on a certain and definite day, for example the small pox on the third or beginning of the fourth day. All these appear to be founded on immutable laws, according to which the motions of the body in health and in disease are governed; and to which nature becomes so accustomed, that when the order is disturbed, she frequently excites fresh accessions, and at length restores the irregular diseased actions to their usual and proper course.

Thus we often see an intermittent fever that has been suddenly suppressed, return of its own accord,

cord, although it may have disappeared for a considerable length of time, and resume its former type.

When therefore, we observe that the course of almost every disease is restricted to a certain order and to particular periods; when in every acute and chronic affection, the vital motions are performed according to stated laws consonant with the nature of the affection, it may readily be understood why every disease has its certain and determinate crisis, its particular day of décline and termination, and why a crisis taking place sooner or later than the proper period, is frequently imperfect, and often followed by a return of the disease; because it may be justly concluded, that the vital motions are in such cases improperly directed from that line which is accommodated to the nature of the disease. The truth therefore, of crisis and critical days, can hardly be disputed; yet it must be allowed that climate, the present mode of living, calculated to enervate the human frame, and thus to render it much more obnoxious to chronic than acute diseases, and the present violent modes of treatment, may have considerable effect in disturbing the natural order of things, and thus occasion obscurity.

Having thus vindicated the doctrines of Hippocrates from the attacks of less observant practitioners, the author proceeds to explain the nature of crisis; to point out what are the phenomena which precede and accompany it; to examine in what diseases it takes place, and under how many various forms it is observed. He next endeavours to explain the doctrine of *cru-dity* and *coction*, the nature of the critical perturbation, and its consequences, to wit, the critical symptoms; and lastly, the various forms of crisis, observed in each particular disease.

As exhibiting an accurate and comprehensive view of the phenomena of disease, and of the perceptible efforts of nature towards their removal, we consider the present as a valuable publication. We do not, however, enter into all the theories of the author, nor do we think the explanation that he offers of the changes thus brought about, to be always satisfactory. The work is founded more on the doctrines of the humoral pathology, than will be approved of by the generality of British practitioners.

XXXI.

J. D. Metzger, Archiatri regii ac Professoris Medicinæ Regiomontani, *Systema Medicinæ Forensis succinctum*. Stendaliæ, 1794. Boosey, London. 8vo. p. 290.

THE present is a Latin translation from a German work, which was published several years ago. The subject is thus spoken of by the author in the introduction: ‘No one of the sciences is of such copious and extensive utility as the medical art. Because, founded on the real necessities of mankind, it not only watches over the health of individuals, but extends its influence over the public weal. It furnishes a guide to the state of politics and laws, and contributes to the administration of public justice.’

A synopsis of all the regulations of the medical art, which contribute, in any wise, to the administration of the laws of the state, constitutes what is called *public medicine*, (*medicina publica*;) which denomination, although new, yet is sufficiently applicable, comprehending every thing that has any relation to *political* or *judicial* medicine: the former, including those precepts pertaining to general policy; the latter, or *judicial medicine*, (*forensis*,) those regulations which

which belong to the administration of the laws. Formerly these were both comprehended under the same denomination. They have indeed some connection, but are at the same time different. The latter is the subject of the present treatise.

The objects of medical jurisprudence are, in general, the following : 1. *Living subjects*, whose diseases, state of mind, or body, age, sex, &c. are to be determined. 2. *Dead bodies*, where the manner of death being produced is doubtful, or where there is suspicion that it had been induced by improper means. 3. *Inanimate substances*. e. g. poisons, the properties of which are to be investigated. So pretended diseases sometimes may become the subject of examination. The nature of wounds and injuries which have been followed by death: also the state of the lungs in infants newly born, to determine whether they have ever breathed, the consideration of the circumstances relating to virginity, the signs of death, in cases of apparent extinction of life, from drowning or other causes of sudden deaths.

From this view of the subject it will readily be gathered that the study of this branch of medicine is often of considerable importance. The different heads are treated of, in the work before us, with perspicuity, and, we think, will be found to contain a sufficiently complete idea of the subject.

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THE

MEDICAL and CHIRURGICAL
REVIEW.

JANUARY 1795.

XXXII.

Medical Facts and Observations, Vol. 5. 8vo. p. 232,
3s. 6d. boards. Johnson, London, 1794.

IT may be remembered, that on the discontinuance of the *London Medical Journal*, the editor proposed to publish occasionally, as the collection could be made, a volume of such cases and observations as should be transmitted to him, as a substitute for the former periodical work. The present is the fifth volume of this kind which has appeared. It contains seventeen papers; to which is added a catalogue of books on the

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different parts of medicine, which have been published at different places since the year 1790.

The first paper contains *an account of two cases of popliteal aneurism*, by Mr. Forster, of Guy's Hospital. In both, the method of treatment recommended by Mr. Hunter, viz. tying the artery about the middle of the thigh, was had recourse to, and succeeded in the most favourable manner.

The subject of the first case was a labouring man, thirty-five years of age. The complaint had been coming on gradually for twelve months. A tourniquet was placed high up on the limb, and left entirely loose. An incision was then made in the course of the under edge of the sartorius muscle, about three inches in length, and by raising up the lower edge of the muscle, the artery was come at, about two inches before it perforates the triceps femoris; after carefully separating it from the vein and nerve, a broad ligature was passed under the artery by means of a common eyed probe, placing a dossil of lint on the artery immediately over the ligature, upon which lint was laid a cylindrical piece of wood, about a third of an inch in diameter, and three quarters of an inch long, so that on tying the ligature, the artery, lint, and stick became included in such a manner as to make the artery spread

spread itself more than half round the stick thus cushioned with the dossier of lint. The ligature was then drawn tight enough to stop all pulsation in the tumour below ; the ends of the ligature were left hanging out of the wound, which was partially closed ; the dressings were superficial, and an easy bandage was applied.

On the seventeenth day from the operation, the ligature, stick, and lint came all away together, without the least pain or force ; so that a total solution of continuity in the artery must have taken place. In the space of a month the sore was nearly healed, and the patient gradually recovered the perfect use of the limb. About two years afterwards, the tumour in the ham, though much diminished, remained in a flaccid state, without the least pulsation or pain.

The second case so much resembles the one above related, that we deem it unnecessary to detail it. They are both valuable, as proofs of the utility of a method of treating a very dangerous disease, the discovery of which by the late Mr. Hunter, may perhaps be considered as one of the greatest improvements in modern surgery.

2. *An account of the good effects of opium in the case of a person poisoned by digitalis,* by Doctor Reddoes. The patient had taken from two to

four doses of an infusion of digitalis more than were ordered, for him. Violent vomitings were the consequence, which continued for several days. The quantity of a grain or two of opium was administered frequently, and the symptoms gradually subsided.

3. *Some observations on the diseases that occurred on board the ship Europa, during a voyage to and from Madras and Bengal, by Mr. Watson.* The chief diseases were fevers, which yielded in almost every instance, to bark, after evacuations had been made by antimonials.

4. *Case of a compound dislocation of the tibia and fibula, accompanied with a fracture and loss of a considerable portion of the astragalus, and likewise with a fracture of the thigh bone.* Notwithstanding the great degree of injury that the patient in this case had sustained, a cure was effected without having recourse to amputation. It affords, the writer observes, an additional argument against immediate amputation in cases of bad compound fracture. This is a point of practice, however, on which surgeons are not yet agreed.

5. The next is a case of a violent distortion of the foot, occasioned by a forcible rotation of the astragalus, accompanied with a laceration of the integuments at the outer ankle, and exposure of a portion

a portion of the fibula ; by Mr. William Guy, Surgeon, at Chichester.

Though appearances were so formidable, there was reason to hope that the real injury sustained by the parts concerned, was not answerable to them. By proper extension the parts were replaced in their former situation, and in less than three months after the accident, the patient recovered the perfect use of the joint.

The sixth paper contains some cases of the Urticaria or Nettle Rash, by Dr. Winterbottom, Physician to the Settlement at Sierra Leone. The affection arose from having eaten of a fruit which was found in the woods, in form and size resembling a damson. A dose or two of purging salts were found sufficient for the removal of the symptoms.

7. *An account of the effects of Vitriolic Æther, in a case of spasmodic affection of the stomach; and in two cases of intermittent fever;* by Mr. William Davidson. The subject of the first case was a young married lady; having undergone much fatigue, she was seized with a violent spasm of the stomach, which came on immediately after dinner, every day, for eight days, and continued for the space of an hour or two, receiving no relief from a variety of warm things which were administered. A drachm of æther was given in a glass

a glass of peppermint water. She thought it very strong, and complained of its nearly suffocating her, but the pain went off immediately, and never returned afterwards. Mr. D. attributes the effect to the shock given to the system through the medium of the stomach, putting a stop to the diseased action then existing. Upon this ground he thought this medicine well adapted for putting a stop to the attack of intermittents. He took therefore an opportunity of employing it in a case of quartan ague, which had continued for five months, and had resisted the bark, and other remedies. An æther draught similar to the above was directed to be taken when the first feeling of the fit should come on. Some minutes, however, elapsed after the accession of the cold fit, before the draught was taken, which, notwithstanding, produced the desired effect: when taken into the stomach, the patient received so considerable a shock, that she imagined some mistake had been made in preparing her medicines, and was therefore much frightened. The coldness went off immediately, and being succeeded by a pleasant sensation of warmth, without any fever or perspiration, she was in good spirits all the rest of the evening. At the approach of the next fit the remedy was repeated, and with the same good effect. The ague disappeared from that time.

Another

Another instance is related of a tertian fever being cured by the same method, joined with the use of the bark.

The eighth paper contains an account of the poisonous effects of the Datura Stramonium, or Thorn Apple, in which we observe nothing new.

9. Is a case of Hydrophobia which terminated fatally. Mercurial frictions were employed.

10. *An account of a child born without organs of generation*, by Mr. Edward Ford.

11. *Case of Apoplexy in a pregnant woman*, by Mr. Philip Williams, of Rugby, in Warwickshire.

The remainder of the volume consists of papers extracted from other works ; the titles are the following :

12. *Description of Kilburn Wells, and analysis of their water*, by Mr. John Godfrey Schmeisser, from the Philosophical Transactions.

13. *An account of the remarkable effects of a shipwreck on the mariners ; with experiments and observations on the influence of immersion in fresh and salt water, hot and cold, on the powers of the living body*, by Dr. Currie, of Liverpool. Philos. Trans. London, 1792, part II.

14. *An account of the Quassia Polygama, or bitter wood of Jamaica ; and of the Cinchona Brachycarpa, a new species of Jesuits Bark found in the same Island,* by Mr. John Lindsay, Surgeon in Jamaica. Trans. Royal Soc. Edin. vol. 3.

15. *Extract of a letter from the Rev. Charles Perceval to Robert Perceval, M. D. containing an account of a girl, whose eyes were constructed in an extraordinary manner.* Trans. Royal Irish Acad. vol. 4.

16. *An attempt to determine with precision such injuries of the head as necessarily require the operation of the Trepbine,* by Sylvester O'Halloran, Esq. Trans. Royal Irish Acad. vol. 4.

17. *Account of a fistulous opening in the stomach,* by George Burrowes, M. D. Trans. Royal Irish Acad. vol. 4.

XXXIII.

Letters from Dr. Withering and others, to Dr. Beddoes; together with some other papers, supplementary to two Publications on Asthma, Consumption, Fever, and other Diseases. 8vo. p. 48. 1s. Johnson, London.

THE science of pneumatic medicine, for the promulgation of which the medical world is chiefly indebted to the genius and industry of Dr. Beddoes, promises to open a vast field of inquiry to the labourers in the healing art. The subject is doubtless of very high importance, and worthy the investigation of the lovers of knowledge. It is one in which mankind in general are highly interested; influencing in an equal degree the preservation of health, and the treatment of diseases to which the human body is liable. The learned author perseveres, with unabating ardour, in the prosecution of the subject; the result, we trust, will afford him that highest of gratifications, the consciousness of having contributed to the welfare of his species.

The first paper contains observations on the alterations produced in the air of places where a great number of persons are assembled; by M.

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Lavoisier,

Lavoisier, extracted from the Memoirs of the Society of Medicine at Paris.

The common atmosphere, on analysis, appears to consist of 27 or 28 parts in 100 of an air perfectly fit for the purpose of respiration, and now known by the name of oxygene or pure air; and of 72 or 73 parts of a mephitic fluid, absolutely incapable of supporting the combustion of bodies, or the respiration of animals, which has lately been denominated azotic air. Respiring animals live only for a given time, in a given quantity of atmospheric air; they soon become faint, and sink into a kind of slumber, which is succeeded by great agitation; the animal expiring in convulsions. In general, it may be considered as an established fact, that a man cannot subsist longer than an hour in a quantity of air equal to five cubic feet.

From several experiments, M. Lavoisier deduces, that the air of the atmosphere, which is originally composed of only two fluids, or very nearly so, is composed of three in all places which contain numerous assemblies, in consequence of the conversion of a part of the oxygene air into carbonic acid air; that these three fluids are not mingled in equal proportions in every part of the room, but on the contrary, tend to arrange themselves

selves according to their specific gravities; that the azotic air, as being lighter, and favoured by the heat which expands it, naturally mounts upwards; and thus a species of circulation is produced, which supplies the place of the mephitic air, which escapes at the top, with fresh air blowing in from the lower avenues.

Animals will not live long in oxygene or pure air. They die of a burning fever, or some inflammatory disease. Their muscles, on inspection, are found to be very red ; the heart livid and full of blood, especially the right auricle and ventricle ; the lungs are but little inflated, but are red, even externally, and gorged with blood. A truly salubrious air, therefore, is composed of an adequate mixture of oxygene and azote. This difference is observable, that when the oxygene is superabundant, the animal only suffers severely ; when it is deficient, the consequence is immediate death.

The next letter is one from Dr. Withering on pulmonary consumptions: speaking of those who are exempt from consumptions, he observes, " It is a prevalent opinion that the workmen employed about limekilns never become consumptive ; and it is usual for the affected with the disease, to repair to ignited kilns to breathe the vapour issuing therefrom. In looking about for the causes which promote or retard the frequency of consumptions,

different situations and occupations become of course objects of attention; and the only classes of men I have yet observed exempt from the disease, are butchers and makers of catgut. They both pass much of their time amidst the stench of dead animal matters, the latter very much so; the former live chiefly on animal food, and are much exposed to the inclemencies of the season, whilst the latter live as other manufacturers, and work under cover, in close and rather warm buildings. These people are always sleek, often fat, and the rosy bloom of health adorns their cheeks. These facts but ill accord with our theoretical notions of putrid diseases."

The effect of pregnancy in stopping the progress of consumption is well known. Dr. Beddoes thinks this may arise from the impeded action of the diaphragm. Should this be true, Dr. W. suggests that the same effect might be produced by the application of a compressive bandage upon the abdomen. We do not think it probable that the cause of this effect is of so simple a nature.

Dr. W. mentions likewise some instances within his own knowledge, of the progress of consumptions being stopped by infancy.

The exhibition of strong animal food, porter, and wine, which has been recommended by some modern

modern practitioners, has not, in Dr. Withering's opinion, produced any essential effect upon the disease. He objects to the use of vitriolic acid in the florid consumption, and in hæmoptoe. He says, he has repeatedly observed, that after a few days it has occasioned an increase of oppression, a straighter cough, more heat, and, if persisted in, an hæmoptoe, though none had appeared before. The respiration of carbonic acid air, he thinks, has prolonged the existence of several consumptive patients.

A letter from Dr. Ewart of Bath contains an account of two not very clear cases, which had been relieved by the inhalation of mephitic air.

Another from Dr. Thornton of London mentions the good effects of breathing pure and cool air in typhus fever.

Next follows a letter from Dr. Biggs, giving an account of dyspœa cured in himself, by inspiring three times a day, a mixture of one part of oxygene with three of atmospheric air. A cough and expectoration which accompanied the difficulty of breathing, continued after this had been removed.

On the use of yeast in putrid fevers.—By the Rev. Edward Cartwright. This gentleman was induced
to

to try this remedy, from what he had read of the power of fixed air, in preserving meat from putrefying. A boy of about fourteen years of age, had been ill for several days of a putrid fever, for which bark and wine had been exhibited without advantage. When all hopes of recovery had been given up, this gentleman directed two table-spoonfulls of yeast to be taken, and if the patient was not the worse for the medicine, to repeat it every three hours. ‘ I then took my leave,’ says he, ‘ somewhat precipitately, I own ; for I began to think it possible the yeast might ferment so violently as to bring on an immediate suffocation. I set off on my journey, and was absent about a fortnight. Being told on my return the boy was recovered, I could not repress my curiosity to see him immediately. Though fatigued with my journey, and night was coming on, I went directly to where he lived, which was three miles from my house, in a wild part of the moors. I found the boy, as I had been told, perfectly well. On enquiring of his mother the manner and progress of his recovery, she told me, I was scarcely out of sight, before the boy said to her, “ Mother, I think I am getting well : ” and from that time he continued to mend as fast as possible.’ In the space of two years after, we are informed this gentleman exhibited the same remedy to above fifty patients

tients in fever, without losing a single one ; other remedies were not omitted at the same time.

Some other papers are found in this collection, which tend to set pneumatic medicine in a favourable point of view, but as they afford only probability, we do not think it necessary to be more particular.

XXXIV.

DARWIN'S *Zoönomia*. Continued from page 125.

TO such of our readers as may not have an opportunity of perusing the work itself, we are persuaded it will be a gratification, if we give some further account of this very ingenious publication. It is impossible, in a work of this nature, to give an adequate general view of Dr. Darwin's performance ; for this would be to transcribe the whole : we shall therefore content ourselves with selecting such parts, as we imagine will afford most amusement or instruction.

We concluded our last account with the author's doctrine of temperaments, from which he proceeds

ceeds to point out the affections which are peculiar to those different states of the system, under the heads of, 1st. " *Diseases of Irritation* ; 2d. *Diseases of Sensation* ; 3d. *Diseases of Volition* ; 4th. *Diseases of Association*."

It will be seen from the following account of the Diseases of Irritation, what is the author's theory of fever, and how much it differs from the generally received spasmodic doctrines of Dr. Cullen:

" Those muscles, which are less frequently exerted, and whose actions are interrupted by sleep, acquire less accumulation of sensorial power during their quiescent state, as the muscles of locomotion. In these muscles after great exertion, that is, after great exhaustion of sensorial power, the pain of fatigue ensues : and during rest there is a renovation of the natural quantity of sensorial power ; but where the rest, or quiescence of the muscles, is long continued, a quantity of sensorial power becomes accumulated beyond what is necessary ; as appears by the uneasiness occasioned by want of exercise ; and which in young animals is one cause exciting them into action, as is seen in the play of puppies and kittens.

" But when those muscles which are habituated to perpetual action, as those of the stomach by the stimulus of food, those of the vessels of the skin by the stimulus of heat, and those which constitute the arteries and glands by the stimulus of the blood, become for a time quiescent, from the want of their appropriated stimuli, or by the associations with other quiescent parts of the system ; a greater accumulation of sensorial power is acquired during their quiescence, and a greater or quicker exhaustion of it is produced during their increased action.

" This accumulation of sensorial power from deficient action, if it happens to the stomach from want of food, occasions the pain of hunger ; if it happens to the vessels of the skin from want of heat, it occasions the pain of cold ; and if to the articular

rial system from the want of its adapted stimuli, many disagreeable sensations are occasioned, such as are experienced in the cold fits of intermittent fevers, and are as various, as there are glands or membranes in the system, and are generally termed universal uneasiness.

" When the quiescence of the arterial system is not owing to defect of stimulus as above, but to the defective quantity of sensorial power, as in the commencement of nervous fever, or irritative fever with weak pulse, a great torpor of this system is quickly induced; because both the irritation from the stimulus of the blood, and the association of the vascular motions with each other, continue to excite the arteries into action, and thence quickly exhaust the ill-supplied vascular muscles; for to rest is death; and therefore those vascular muscles continue to proceed, though with feebler action, to the extreme of weariness or faintness; while nothing similar to this affects the locomotive muscles, whose actions are generally caused by volition, and not much subject either to irritation, or to other kinds of associations besides the voluntary ones, except indeed when they are excited by the lash of slavery.

" In these vascular muscles, which are subject to perpetual action and thence liable to great accumulation of sensorial power, during their quiescence from want of stimulus, a great increase of activity occurs, either from the renewal of their accustomed stimulus, or even from much less quantities of stimulus than usual. This increase of action constitutes the hot fit of fever, which is attended with various increased secretions, with great concomitant heat and general uneasiness. The uneasiness attending this hot paroxysm of fever, or fit of exertion, is very different from that which attends the previous cold fit, or fit of quiescence, and is frequently the cause of inflammation, as in pleurisy, which is treated of in the next section.

" A similar effect occurs after the quiescence of our organs of sense; those which are not subject to perpetual action, as the taste and smell, are less liable to an exuberant accumulation of sensorial power after their having for a time been in-

active; but the eye, which is in perpetual action during the day, becomes dazzled and liable to inflammation after a temporary quiescence.

" Where the previous quiescence has been owing to a defect of sensorial power, and not to a defect of stimulus, as in the irritative fever with weak pulse, a similar increase of activity of the arterial system succeeds; either from the usual stimulus of the blood, or from a stimulus less than usual; but as there is in general in these cases of fever with weak pulse a deficiency of the quantity of the blood, the pulse in the hot fit is weaker than in health, though it is stronger than in the cold fit, as explained in No. 2. of this section. But at the same time in those fevers, where the defect of irritation is owing to the defect of the quantity of sensorial power, as well as to the defect of stimulus, another circumstance occurs; which consists in the partial distribution of it, as appears in partial flushings, as of the face or bosom, while the extremities are cold; and in the increase of particular secretions, as of bile or saliva, insensible perspiration, with great heat of the skin, or with partial sweats, or diarrhoea.

" There are also many uneasy sensations attending these increased actions, which, like those belonging to the hot fit of fever with strong pulse, are frequently followed by inflammation, as in scarlet fever; which inflammation is nevertheless accompanied with a pulse weaker, though quicker, than the pulse during the remission or intermission of the paroxysm, though stronger than that of the previous cold fit.

" From hence I conclude, that both the cold and hot fits of fever are necessary consequences of the perpetual and incessant action of the arterial and glandular system; since those muscular fibres and those organs of sense, which are most frequently exerted, become necessarily most affected both with defect and accumulation of sensorial power; and that hence *fever-fits are not an effort of nature to relieve herself*, and that therefore they should always be prevented or diminished as much as possible, by any means which decrease the general or partial vascular actions, when they are greater, or by increasing them when they are less than in health, as described in Sect. XII. 6. 1.

The general doctrine of diseases of sensation is as follows :

" When the motion of any part of the system, in consequence of previous torpor, are performed with more energy than in the irritative fevers, a disagreeable sensation is produced, and new actions of some part of the system commence in consequence of this sensation, conjointly with the irritation ; which motions constitute inflammation. If the fever be attended with a strong pulse, as in pleurisy, or rheumatism, it is termed synocha sensitiva, or sensitive fever with strong pulse ; which is usually termed inflammatory fever. If it be attended with weak pulse, it is termed typhus sensitivus, or sensitive fever with weak pulse, or typhus gravior, or putrid malignant fever.

" The synocha sensitiva, or sensitive fever with strong pulse, is generally attended with some topical inflammation, as in peripneumony, hepatitis, and is accompanied with much coagulable lymph, or size ; which rises to the surface of the blood, when taken into a basin, as it cools ; and which is believed to be the increased mucous secretion from the coats of the arteries, inspissated by a greater absorption of its aqueous and saline part, and perhaps changed by its delay in the circulation.

" The typhus sensitivus, or sensitive fever with weak pulse, is frequently attended with delirium, which is caused by the deficiency of the quantity of sensorial power, and with variety of cutaneous eruptions.

" Inflammation is caused by the pains occasioned by excess of action, and not by those pains which are occasioned by defect of action. These morbid actions, which are thus produced by two sensorial powers, viz. by irritation and sensation, secrete new living fibres, which elongate the old vessels, or form new ones, and at the same time much heat is evolved from these combinations. By the rupture of these vessels, or by a new construction of their apertures, purulent

matters are secreted of various kinds; which are infectious the first time they are applied to the skin beneath the cuticle, or swallowed with the saliva into the stomach. This contagion acts not by its being absorbed into the circulation, but by the sympathies, or associated actions, between the part first stimulated by the contagious matter and the other part of the system. Thus in the natural small-pox the contagion is swallowed with the saliva, and by its stimulus inflames the stomach; this variolous inflammation of the stomach increases every day, like the circle round the puncture of an inoculated arm, till it becomes great enough to disorder the circles of irritative and sensitive motions, and thus produces fever-sfits, with sickness and vomiting. Lastly, after the cold paroxysm, or fit of torpor of the stomach, has increased for two or three successive days, an inflammation of the skin commences in points; which generally first appear upon the face, as the associated actions between the skin of the face and that of the stomach have been more frequently exerted together than those of any other parts of the external surface.

"Contagious matters, as those of the measles and small-pox, do not act upon the system at the same time; but the progress of that which was last received is delayed, till the action of the former infection ceases. All kinds of matter, even that from common ulcers, are probably contagious the first time they are inserted beneath the cuticle or swallowed into the stomach; that is, as they were formed by certain morbid actions in the extremities of other vessels, they have the power to excite similar morbid actions in the extremities of other vessels, to which they are applied; and these by sympathy, or associations of motion, excite similar morbid actions in distant parts of the system, without entering the circulation; and hence the blood of a patient in the small-pox will not give that disease by inoculation to others.

"When the new fibres or vessels become again absorbed into the circulation, the inflammation ceases; which is promoted
after

after sufficient evacuations, by external stimulants and bandages; but where the action of the vessels is very great, a mortification of the part is liable to ensue, owing to the exhaustion of sensorial power; which however occurs in weak people without much pain, and without very violent previous inflammation; and, like partial paralysis, may be esteemed one mode of natural death of old people, a part dying before the whole."

This reasoning, though ingenious, does not entirely carry conviction to our minds. Indeed there is so much obscurity on the subject of the action of contagious matter, that we fear a satisfactory explanation on this head cannot, in the present state of our knowledge, be hoped for.

On the subject of diseases of volition the author remarks, that the term volition is not used exactly in its common acceptation; volition, according to Dr. D. bears the same analogy to desire and aversion, which sensation does to pleasure and pain. Hence, when desire or aversion produces any action of the muscular fibres, or of the organs of sense, they are termed volition; and the actions produced in consequence, are termed voluntary actions. Whence it appears, that the motions of our muscles or ideas may be produced in consequence of desire and aversion, without our having the power to prevent them; and yet these motions may be termed voluntary, according to the author's definition, though in common language they would be called involuntary.

Thus

Thus the convulsions of the muscles, as in epileptic fits, are commonly termed involuntary; because no deliberation is interposed between the desire or aversion, and consequent action, but in the sense of the word as above defined, they belong to the class of voluntary motions.

Convulsive motions are, according to our author, efforts to relieve pain; and they may either be directed to remove or dislodge the offending cause; as the actions of the abdominal muscles in vomiting and parturition; or to prevent the sensation of it, as in epileptic or cataleptic fits.

It is evident that while we strongly exert our voluntary motions, we cease to feel the pains or uneasinesses which occasioned us to exert them. Hence during the time of fighting with fists or swords, no pain is felt by the combatants, till they cease to exert themselves. Thus in the beginning of ague-fits the painful sensation of cold is diminished, while the patient exerts himself in the shivering and gnashing his teeth. In labour pains, the exertion of the parturient woman relieves the violence of the pains for a time, which recur again soon after she has ceased to use those exertions. The same is true in many other painful diseases, as in strangury, tenesmus, and the efforts of vomiting. The principle on which this is founded, appears to be, that the whole sensorial

sensorial power being expended in one mode of exertion, there is none to spare for any other. Hence we may account for the syncope or temporary apoplexy which succeeds to epileptic convulsions.

As in some constitutions, convulsions of the muscles are produced to procure a temporary relief, so in other constitutions, vehement voluntary exertions of the ideas of the mind are produced for the same purpose; for during this exertion, like that of the muscles, the pain either vanishes or is diminished: this violent exertion constitutes madness; and in many cases, the author says, he has seen the madness take place, and the convulsions cease, and reciprocally the madness cease, and the convulsions supervene.

There are some diseases, which obtain at least a temporary relief from the exertions of insanity; many instances of dropsies being thus for a time cured are recorded. The author gives several instances which have come within his own knowledge, of diseases being suspended by the coming on of insanity.

Another mode of mental exertion to relieve pain, is by producing a train of ideas not only by the efforts of volition, as in insanity; but by those

those of sensation likewise, as in delirium and sleep. This mental effort is termed reverie or somnambulation.

" Master A. about nine years old, had been seized at seven every morning for ten days with uncommon fits, and had had slight returns in the afternoon. They were supposed to originate from worms, and had been in vain attempted to be removed by vermifuge purges. As his fit was expected at seven yesterday morning, I saw him before that hour; he was asleep, seemed free from pain, and his pulse natural. About seven he began to complain of pain about his navel, or more to the left side, and in a few minutes had exertions of his legs like swimming. He then for half an hour hunted a pack of hounds; as appeared by his hallooing and calling the dogs by their names, and discoursing with the attendants of the chase, describing exactly a day of hunting, which (I was informed) he had witnessed a year before, going through all the most minute circumstances of it; calling to people who were then present, and lamenting the absence of others, who were then also absent. After this scene, he imitated, as he lay in bed, some of the plays of boys, as swimming and jumping. He then sung an English and then an Italian song; part of which with his eyes open, and part with them closed, but could not be awakened or excited by any violence, which it was proper to use.

" After about an hour he came suddenly to himself with apparent surprise, and seemed quite ignorant of any part of what had passed; and after being apparently well for half an hour, he suddenly fell into a great stupor, with slower pulse than natural, and a slow moaning respiration, in which he continued about another half hour, and then recovered.

" The sequel of this disease was favourable; he was directed one grain of opium at six every morning, and then to

rise

rise out of bed; at half past six he was directed fifteen drops of laudanum in a glass of wine and water. The first day the paroxysm became shorter, and less violent. The dose of opium was increased to one-half more, and in three or four days the fits left him. The bark and filings of iron were also exhibited twice a day; and I believe the complaint returned no more."

The general method of treating convulsive diseases, therefore, according to our author, must be to relieve, and prevent the recurrence of the pain which gave rise to the affection.

The method of relieving inflammatory pain, is by removing all stimulus, as by venæflection, cool air, mucilaginous diet, aqueous potation, silence, darkness.

The method of relieving pains from defect of stimulus, is by supplying the peculiar stimulus required, as of food, or warmth.

And the general method of relieving pain is, by exciting into action some great part of the system, for the purpose of expending a part of the sensorial power. This is done either by exertion of the voluntary ideas and muscles, as in insanity and convulsions; or by exerting both voluntary and sensitive motions, as in reverie; or by exerting the irritative motions by wine or opium internally, and by the warm bath or blis-

ters externally ; or lastly, by exciting the sensitive ideas by good news, affecting stories, or agreeable passions.

The last class of diseases are those of association. Many synchronous and successive motions of our muscular fibres, and of our organs of sense, or ideas, become associated, so as to form indissoluble tribes or trains of action. Some constitutions more easily establish these associations, whether by voluntary, sensitive, or irritative repetitions, and some more easily lose them again.

When the beginning of such a train of actions becomes by any means disordered, the succeeding part is liable to become disturbed in consequence ; and this is commonly called sympathy, or consent of parts. For the more clear understanding of these sympathies, it is necessary to consider a tribe or train of actions as divided into two parts; one the primary or original motions, the other the secondary or sympathetic ones.

The primary and secondary parts of a train of irritative actions may reciprocally affect each other in four different manners. First, They may both be exerted with greater energy than natural. An example of this may be taken from the consent of the skin with the stomach, as when after a full meal, a glow or flushing of the face succeeds.

succeeds. Second, The former may act with greater, and the latter with less energy. This is observable in persons of a weak constitution, in whom a sense of chilliness takes place after a full meal, instead of the glow above-mentioned. Another instance of this is, the vertigo attending intoxication; in this circumstance so much of the sensorial power is expended on the stomach, and its most strongly associated motions, that the irritative motions of the retina become imperfectly exerted from deficiency of sensorial power, and hence the staggering inebriate cannot completely balance himself by such indistinct vision.

Third, The primary parts of a train of irritative actions may act with less, and the secondary with greater energy. This appears from the temporary coryza which many persons experience on lying in bed with their arms and shoulders uncovered. Also from the increased action of the absorbents, which take up the mucus from the lungs, pericardium, and other cells of the body, when nausea and vomiting are excited by fox-glove, antimony, or other emetics. Fourth, The primary and secondary motions may both act with diminished energy; as in the dyspnœa which is felt on going into the cold bath; and in the increased debility of the pulsations of the heart and arteries during the operation of an emetic; and lastly, in the total stoppage of the motions of the

heart, or death, in consequence of torpor of the stomach, when affected with the commencement or cold paroxysm of the gout.

II. The primary and secondary parts of the trains of sensitive association reciprocally affect each other in different manners. First, The increased sensation of the primary part may cease, when that of the secondary commences. This is the general origin of those pains, which continue some time without being attended with inflammation; such as a pain at the pit of the stomach, from a stone at the neck of the gall bladder, and the pain of strangury in the glans penis, from a stone at the neck of the urinary bladder. The hemicrania, or nervous head-ach, when it originates from a decaying tooth, is another disease of this kind; as the pain of the carious tooth always ceases, when the pain over one eye commences. Second, The increased action of the primary part may cease, when that of the secondary commences. This is the usual manner of the translation of inflammations from internal to external parts of the system, as in gout. Third, The primary part may have increased sensation, and the secondary part increased action. This appears to be the way in which most inflammations commence. Thus, from the feet being affected with the pain of cold, inflammation of the membrane of the nostrils succeeds; and it is probable that .

that the internal inflammations, as pleurisy, or hepatitis, which are produced after the cold paroxysm of fever, originate in the same manner from the sympathy of some parts which were previously pained from quiescence. Fourth, The primary part may have increased action, and the secondary part increased sensation. An example of this may be taken from the pain of the shoulder, which attends inflammation of the membranes of the liver.

III. The associated trains of our ideas may have sympathies, and their primary and secondary parts affect each other in some manner similar to those above described ; and may thus disturb the deductions of our reasoning, as well as the streams of our imaginations ; present us with false degrees of fear ; attach unfounded value to trivial circumstances ; give occasion to our early prejudices and antipathies ; and thus embarrass the happiness of our lives. A copious and curious harvest, the ingenious author observes, might be reaped from this province of science, in which the fickle as yet has scarcely been wielded.

[*To be continued.*]

XXXIV.

A Letter on the Yellow Peruvian Bark, containing an Historical Account of the first Introduction of that Medicine into France, and a circumstantial Detail of its Efficacy in Diseases. By Michael O'Ryan, M. D. late Professor of Medicine in the College of Lyons in France, &c. 8vo. p. 31. 1s. Nunn, London, 1794.

THIS Letter is addressed to Dr. Relph, author of a late Treatise on the same subject. The author observes, that whatever may now be asserted in favour of this important remedy, it cannot surpass what the fairest trials given it on the continent for these seven years past, have established in the most incontestible manner. The history of the discovery of this bark is as follows:—The Peruvian mountaineers having made an irruption into the Spanish possessions, and having been not only repulsed, but pursued very far into the mountains, the army on its return, discovered many trees which furnish this bark much more lofty and large than those which grew on the lower grounds; the soldiers stripped them, and each brought home a load of the bark, which

which being bought up by the Spanish merchants established at Peru, was sent to Cadiz.

The trials given to this species of bark in the *Grand Hotel Dieu* of Lyons, afforded such proofs of its superior powers, compared with the other kinds of bark, that in the space of a few months afterwards, it came to be almost the only kind employed in Paris, and all the other cities of the kingdom. The characters here given of this substance, agree in all material points with those we have before taken notice of, in our account of Dr. Relph's publication on the same subject, to which therefore, we refer for a more particular account.*

XXXV.

Practical Observations on the Operation and Effects of certain Medicines in the Prevention and Cure of Diseases to which Europeans are subject in Hot Climates. By R. Shannon, M. D. 8vo. p. 556.
7s. Verner, London. 1794.

WE hold it our duty to detect and expose to public contempt the mean arts of empiricism and fraudulent imposition. It is with this

* Vide Med. and Chirur. Review for September 1794.

this view that we condescend to notice the above publication, which we should otherwise have left to that contempt and oblivion it merits, and to which a little time must consign it. The specious title prefixed to this indigested and bulky volume, is calculated to impose on the reader an idea of its importance. It therefore becomes us to state, that its sole purport is, to recommend the sale of some medicines, to which the author, with all the unblushing effrontery of quackery, attributes effects at once incredible and contradictory. A few extracts will suffice:

“ To lower the impetus of a fever, evacuations and *our medicines* will be adviseable; to promote and increase it, and keep up the pabulum *vitæ*, *our medicines*, assisted by aromatics of different kinds, viz. saffron, castor, camphor, and the like.”

“ If the heat in fever proceeds from a putrid cause, it is to be removed by antiseptic and gentle diaphoretic medicines, *which are two of the sanative properties of our medicines, &c.*”

“ When anxiety in fever is owing to spasm, the warm cordial antispasmodic medicines, *properties which our medicines possess in an eminent degree*, will be most expedient.”

“ In

“ In the colliquative sweats which happen at the latter end of fevers, the tonic and bracing medicines are the only ones to be depended on; *take of our antifebrile powder, No. 1, grs. 5, &c.*”

“ For watchings in fever, when opiates fail, *the antifebrile powder is to be taken.*”

“ For coma, or constant drowsiness in fevers, make a poultice to be applied to the feet, to which add *a paper of our antifebrile powder, &c.*”—*cum multis hujusmodi aliis.*

However this author may shelter himself under the example of other practitioners of no small eminence, we trust that the liberal and enlightened character of the present age will treat with the indignation it deserves, every attempt to impose on mankind in an art so essential to their happiness and welfare, as that of medicine most unquestionably is.

XXXVI.

The Parisian Chirurgical Journal. By Mons. Default, principal Surgeon to the Hotel Dieu at Paris. Translated by Robert Gosling. 2 vols. 8vo. p. 774. 15s. boards. Boosey, London, 1794.

THE work before us was published periodically at Paris, under the direction of Mons. Default, whose character as an anatomist and a surgeon, cannot fail to stamp a value on the performance. It consists of a great number of miscellaneous observations on different chirurgical and medical subjects, many of which have been furnished by Mons. Default himself. In the variety here collected, a great difference will of course be found in the degree of importance of the different articles. Many of the observations will be found to convey much valuable information; from many others, however, and from the theories employed in their explanation, we learn, that both the science and practice of the art of surgery in France is much behind that of our own country.

Little can be said in praise of the translation. It is impossible to abridge a work of this kind, and there would be little utility in extracting from such a various mass.

XXXVII.

XXXVII.

Considerations on the Medicinal Use of Factitious Airs, and on the manner of obtaining them in large quantities. In two parts. Part I. by Thomas Beddoes, M. D. Part II. by James Watt, Esq. 8vo. p. 80. 2s. 6d. Johnson, London, 1794.

THE former part of this pamphlet by Dr. Beddoes, is intended, by experiment and observation, to exhibit proofs of the power of factitious airs to affect the living frame. Section 1, treats of *the Atmosphere*. This is proved, Dr. B. observes, to consist of two kinds of air. One kind is called *vital, dephlogisticated, or oxygene air*; the other has been named *phlogisticated, azotic, foul, or bad air*. The proportions of these to each other are about 27 or 28 of the former, to 72 or 73 of the latter. *Oxygene or pure air* is necessary for the support of animal life and flame. A candle burns in a vessel full of oxygene air with dazzling brilliancy, and is consumed with great rapidity. This air, when it unites with them, turns various substances sour, as beer and milk. It changes black blood from a vein to a bright florid red colour. This difference of colour may be observed in a clot of blood exposed

to the atmosphere; the surface turns of a bright red, whilst the internal part remains of a blackish colour.

Section 2, mentions some experiments which indicate, that breathing renders common air unfit for supporting life and flame, by depriving it of oxygene. Dark blood introduced into vessels containing oxygene or common air, lessens its quantity as it becomes ruddy. Hence it appears, that the blood drinks up a portion of the oxygene air received into the lungs; and from various considerations, Dr. B. is of opinion, that it appears to be used in the contraction of the muscles, and in several fluids, secreted from the blood; for the blood, after traversing the body, comes back to the lungs dark, deprived of the oxygene, which it received in passing through them.

Section 3, is intended to shew, that though the proportion of oxygene in the atmosphere may be best adapted to the average state of health, it is probable that the proportion may be smaller than is beneficial to some disorders, and larger than in others.

Section 4. *The effect of breathing oxygene air undiluted.* Dr. Priestley, and Mr. Lavoisier found animals either to die, or to become exceedingly

ceedingly ill in such an air, while it continues more oxygenated than the atmosphere. The heart and arteries pulsate more quickly and forcibly; the eyes grow red, and seem to protrude; the heat of the body is said considerably to increase, sweat to break out over the whole body, and fatal mortification of the lungs to come on. These appearances denote violent inflammation, and dissection after death has proved it.

Section 5. Experiments with Air containing somewhat more oxygene than the atmosphere. From these experiments it appears, that animals having previously inspired oxygene air, preserved life longer when immersed in water, and recovered more readily than others.—*6. Necessity of oxygene air to muscular exertion.* Of two half-grown kittens, one was teased to make efforts for half an hour, and then put into an air-tight vessel, in which it lived 48 minutes; the other lived 56 minutes in the same vessel. Other experiments were made, which gave some probability to this opinion, but are not decisive.—*7. Another comparative experiment with an animal charged with oxygene.* From this it would appear, that the inspiration of air containing an increased proportion of oxygene enabled a rabbit to resist a much greater degree of cold, than in other circumstances.

8. *Experi-*

8. *Experiments with oxygene and other airs, largely distributed through the cellular substance.* These experiments are quoted from other authors, but afford no conclusion of the medicinal powers of the elastic fluids.—9. *Experiments with hydrogene and other mephitic airs.* These, Dr. B. observes, afford proof of the power of factitious air to affect the living frame. It appears that oxygene air, when inspired pure, or nearly so, increases all the internal motions; by reddening the blood, it brightens the colour of the solid parts, even that of the liver; that it renders animals less capable of being drowned or destroyed by cold. Between the unrespirable airs, there seems a remarkable difference in their power to produce insensibility and death. Hydrogene appears the least noxious, both when inspired alone, or mixed with atmospheric air. Azote probably differs little from Hydrogen. Hydro-carbonate seems extremely deleterious. Nitrous air more quickly destroys life than any of the others.—12. *Some particulars relative to oxygene, supplemental to the preceding.* The raised epidermis of a blistered finger, after all action of the cantharides had ceased, was cut away in carbonic acid air. No pain was felt. The atmospheric air was slowly mixed with the other in the glass cylinder, as was perceived by the dull manner in which a candle burned in it; and now some

some slight pain was felt. The finger being put into oxygene air, a smarting came on, and lasted twenty minutes, but now became less. The finger was next put into air containing alkaline fumes ; and the pain was much severer than ever. A second blister being opened in the air, smarting pain came on. In a bladder of fixed air it soon went off. The finger was plunged into oxygene air ; it felt as when salt is sprinkled on a cut. In carbonic acid air, the pain in two minutes quite subsided, and returned when exposed to the atmosphere. It is generally supposed that the exposure of wounds to atmospheric air is pernicious, and these experiments seem to shew to which ingredient that must be attributed.

The author next gives some hints for the use of unrespirable airs, as well as of oxygene. It appears pretty clearly, that oxygene air is prejudicial in consumptive cases, and that at least temporary relief has occasionally been felt from a mixture of hydrogene with atmospheric air in those cases. But the science of pneumatic medicine must be considered as yet in its infancy. Much caution therefore is necessary to guard against a hasty induction from facts, which are with difficulty ascertained. Without attention to this, it is easy to see that much mischief may arise.

The second part of this pamphlet contains “A Description of an Air Apparatus, with Hints respecting the Use and Properties of the different Elastic Fluids. By James Watt, Esq. This apparatus, with the manner of using it, requires the plates which are subjoined, to make it intelligible. This part also contains some observations on the effect of artificial airs, by Mr. Watt and his friends.

XXXVII.

An Enquiry into the Nature and Properties of Opium.
By Samuel Crumpe, M. D. Member of the Royal Irish Academy. 8vo. p. 304. 5s. Boards. Robinsons, London, 1794.

THE ingenious author of the above Inquiry endeavours, on the sure basis of experiment and observation, to ascertain the properties of opium, and its real effects on the living system. In the long list of the *materia medica*, there is perhaps no substance, which possesses powers more active, and none whose operation and effects are more frequently described

sired in the practice of medicine than opium. It becomes, therefore, of the highest importance that its true character should be investigated, and its principles universally understood. Much has been done in this field, but much was likewise wanting to bring the subject to any degree of perfection. The experiments of Dr. C. serve, in some measure, to settle some points, about which great variety of opinion has taken place. No apology, therefore, can be necessary for our entering very fully into the matter.

The first chapter is employed in giving the natural history of opium, and the mode of collecting it in those countries in which it is produced. These, as collected from a variety of authors, and in general well known, we shall pass over.

The second chapter is entitled, *An Account of the Effects of Opium on Living Systems*. We have here related several experiments to shew the immediate effects of this substance, when applied to various parts of the system in health.—Experiment I. A small quantity of a strong watery solution of opium was poured into the eye; it immediately occasioned considerable pain, which continued for about ten minutes, and a smart degree of inflammation both in the tunica adnata and palpebræ, which remained very observable

for many minutes after the pain had ceased; an effusion of tears likewise took place. After thirty minutes had elapsed from the commencement of the experiment, a small quantity of spirits diluted with water, was poured into both eyes; the author thought the pain excited was greater in that into which the solution of opium had not been poured.

,, Exp. 2. A small quantity of opium reduced to powder, drawn up the nostrils, produced the same effect as weak snuff would have done.

Exp. 3. Some of the solution being injected into the urethra, it was immediately followed by a sense of heat and pain.

Exp. 4. The author having scraped off the cuticle above his wrist, he applied to the part some of the aqueous solution of opium, which manifestly increased the pain of it.

Exp. 5. Whether the opium applied to the sound skin produced any effect, has been much disputed by different authors. Its use in this way has, however, been very commonly adopted in diseases. This experiment affords no proof of its powers applied in this manner. The author applied at the same time round one of

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the fingers of his right hand, and round the left arm about midway between the wrist and elbow, a large portion of opium, and suffered it to remain there eighteen hours; it was productive of no peculiar sensation, and the parts to which it was applied differed in no respect, after its removal, from those which surrounded them.

The effects of opium taken internally come next to be examined. These the author arranges, as affecting—1st. the vital—2d. the natural—and 3d. the animal functions. From an adequate dose of opium, the following changes are observable in the vital functions. The pulsations of the heart and arteries are first rendered quicker, fuller, and stronger, and afterwards slower than at the time of taking it; with the increase of frequency in the pulse, the heat of the body is generally somewhat augmented; the respiration is little affected, except a large dose has been taken; towards the conclusion of the operation of which it becomes slow, stertorous, and laborious.

Opinions diametrically opposite have been entertained by different authors; some asserting that the only effect of opium is to render the pulse slower and weaker; this difference of opinion probably arises from the observation

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having been made at different times after taking the medicine. To ascertain this point, the author made the following experiments with all imaginable care and exactness.

Exp. 6. Having breakfasted lightly at nine in the morning, he took at twelve one grain of opium diffused in a tea-spoonful of warm water; his pulse beat 70 in a minute, their natural standard; and the following were the changes observed in them:

In	21 5 1 10 1 15 20 25 1 30 1 35 1 40 1 45 1 50 1 55 1 60 1	in minutes.
Pulse beat	70 1 74 1 76 1 76 1 74 1 74 1 74 1 72 1 72 1 70 1 70 1 70 1	

He could scarcely observe any change in the strength or fullness of the pulse during the whole experiment; nor was it succeeded by drowsiness, or any similar affection.

Exp. 7. At one o'clock P. M. was given to a robust healthy young man, whose pulse beat but 44 in a minute, its natural standard, one grain of opium diffused in a small quantity of warm water. He had never before taken any of the medicine, and his pulse was affected in the following manner:

In	5 10 1 5 1 20 1 25 1 30 1 35 1 4 1 45 1 50 1 55 1 60 1 70 1 80 1 90 1 100 1 110 1 120 1 135 1	min.
P. beat	44 1 44 1 44 1 44 1 50 1 52 1 54 1 48 1 48 1 46 1 46 1 46 1 44 1 42 1 42 1 40 1 40 1 44 1	

After

After twenty-five minutes had elapsed, there was a manifest increase as well in the strength and fullness, as in the frequency of the pulse. In an hour this began to diminish, and continued decreasing till near the end of the experiment; a slight heaviness, which came on 55 minutes after he had taken the opium, was the only effect experienced from it.

Exp. 8. Forty-five minutes after twelve, P. M. his pulse beating 70 in a minute, the author took two grains and a half of opium, dissolved in an ounce of water.

In	5 10 15 20 25 30 35 40 45 50 55 60 75 90	minutes.
P. beat	74 74 74 78 80 72 70 64 64 66 70 70 70	

In twenty minutes he perceived a slight warmth, and soon after a degree of moisture on the skin, the fullness of pulse increasing as well as the frequency. In half an hour he found himself, or at least imagined himself, more alert and sprightly than before; in 40 minutes he perceived a pleasing kind of languor gradually increasing; in 90 minutes a dull head-ach; in two hours time the head-ach was much increased, and attended with drowsiness and nausea; in two hours and a half every disagreeable symptom was increased, the pulse 70; took a spoonful

ful of vinegar, which somewhat relieved the nausea; in two hours and three quarters found all the above symptoms still increasing, and attended with slight vertigo, and tremors in the hands; pulse the same as before, and he at length threw up the contents of his stomach. The head-ach and vertigo were soon relieved; but he continued in a stupid state for the remainder of the day.

It appears clearly, from the experiments above related, that the primary effect of opium on the pulse, is to accelerate and render it fuller. After this increased frequency of pulse has continued for some time, it again becomes slower; and this change, as may be observed in the 8th experiment, is frequently very sudden. The number of pulsations in a given time, after this change has once taken place, continues to diminish, and at length, if the dose has been any way considerable, falls far short of the natural standard of health: and that generally in proportion to the increase of quickness which has been at first produced.

The natural functions are affected by opium in the following manner:

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The appetite and digestion, from unusually large, or frequently repeated doses, are generally impaired, and vomiting often induced; the discharges from the intestines are diminished or suppressed; secretion and excretion are impeded in every part of the system, except the skin, the discharge from which is evidently augmented. These effects are in general clearly observed, and are generally admitted.

In the animal functions, the author remarks, the principal alterations observed are the following:

The hilarity of mind is by degrees augmented, and continues to increase, if the dose has been considerable, until the delirium of intoxication is produced; which, as when resulting from spirituous liquor, is attended in different constitutions with different symptoms. In many it occasions an increased disposition to venery. After these effects have continued for some time, they are succeeded by others of a very opposite nature; the mind becomes gradually dull and languid; the body averse to motion, little affected by customary impressions, and inclined to sleep. If the dose has been considerable, all these symptoms continue to increase; and tremors, convulsions, vertigo, stupor, insensibility, and

and deprivation of muscular action, appear variously complicated, and in various degrees, proportioned to the excess in the dose, and peculiarity of constitution in the sufferers.

Doubts have however been started with respect to the enlivening and exhilarating effects of opium. To determine this point, the author recites his own feelings upon several occasions, as well as his observation of the same effects produced in several other persons. In support of this also, he quotes various authorities. The extensive use of this drug amongst the Turks, as a substitute for wine and spirituous liquors, is not one of the least convincing arguments of its exhilarating effect.

A very satisfactory experiment on this subject is quoted from Dr. Leigh:*

" Finding myself one night at eleven more disposed to sleep than usual, I determined to try the effects of opium, and took immediately thirty drops of the Theb. Tinct. The dose soon began to operate, and produced such enlivening effects as enabled me to prosecute the study in which I was then engaged. In this cheerful situation I remained till one o'clock in the morning, when I found

* Experimental Enquiry into the Properties of Opium, p. 113.

I found a violent drowsiness coming on, which in a short space of time increased to such a degree as to render it difficult for me to avoid falling asleep. I then took between ninety and one hundred drops of the same Theb. Tin&t. which soon roused me from my drowsiness, and invited me once more to engage in my business. This disposition continued but a short time. I soon found myself so exhilarated, as to grow careless of my occupation, and rather inclined to indulge in an excess of gaiety; which was gratified for some time by ridiculous excesses of dancing, singing, &c. The powers of my mind still remained so perfect, as to enable me to attend to my conduct, and to examine the state of my pulse, which was strong and full; but not having a proper watch, could not ascertain its frequency. Those symptoms soon increased to so violent a degree as to alarm me; the pulsations of the temporal arteries became uncommonly strong, and every object appeared multiplied, and covered with a mist.

" In the eastern countries, where opium is taken in very large quantities, its enlivening and exhilarating effects are universally known and acknowledged. The Turks, and other nations, swallow it in large quantities, when marching to battle, or under any other circumstances, which require a mind void of depressing fears, and in-

spired with fortitude. If oppressed by cares or misfortunes, they have recourse to the same assistance, and from its exhilarating powers experience a temporary suspension of melancholy and anxiety. In short, like wine and spirituous liquors in civilized Europe, it is in these countries the support of the coward, the solace of the wretched, and the daily source of intoxication to the debauchee. Of the crowd of eastern travellers, who all agree in noticing these effects of opium, I shall content myself with quoting three; the learned Russel, the accurate Chardin, and a late traveller, the Baron de Tott.

" Doctor Russel,* after remarking that the use of opium is not so common among the Turks as is generally imagined, being chiefly confined to debauchees, says, ' They who take it in large quantities are called *Tereakys*, from the term Theriaca Andromachi. At present they not only use it in that form, but have various other electuaries or confections, wherein it is mixed with aromatics. Some few use it pure, and the greatest quantity I ever knew taken was three drachms in twenty-four hours. The immediate effect I observed it to have upon such as were addicted to its use, was, that their spirits were exhilarated, and from a dozing depressed state, they became active and alert.'

" Chardin

* History of Aleppo.

"Chardin observes,* that the Persians have several preparations of the poppy: 'The first is the juice of the poppy itself, which they use in form of a pill, of the bigness of a pin's head at first, and then gradually increase it to the size of a pea; in one hour's time they begin to feel its effects. The Persians say it entertains their fancies with pleasant visions, and a kind of rapture; they very soon grow merry, then burst into a laugh, which continues till they die away in a swoon. It is found by those who have a disposition for jesting, to encrease that extremely. After the operation of this remedy, the body grows cold, pensive, and heavy; and in this dull and indolent situation it remains till the dose is repeated. When a Persian finds himself in a distressed situation, he has recourse to a piece of opium as big as his thumb, and immediately after taking this he drinks a glass of vinegar; this throws him into a fit of laughter, and every extravagancy of mirth, which terminates in death.—There is a decoction which is made of the shells and seeds of the poppy; this the Persians call *Locquenor*, they sell it publicly in all their cities, as they do coffee. It is curious to observe the countenances of those who use this decoction, before its operation, and when its effects have taken place. When they come into

the decoction-house they are dull, pale, and languid; but as soon as the remedy begins to operate, they are quite changed; they run into all the extravagancies of mirth and laughter; and such an uproar is produced, that it would be more proper to give it the name of the mad-house, than decoction-shop.'

"The Baron de Tott is very particular in his account of the effects of opium on the Turks. Speaking of those who give themselves up to its immoderate use, he says: 'Destined to live agreeably only when in a sort of drunkenness, these men present above all a curious spectacle, when they are assembled in a part of Constantinople called *Teriaky Tcharchifly*, the market of opium-eaters. It is there that, towards evening, one sees the lovers of opium arrive by the different streets which terminate at the Solymania, whose pale and melancholy countenances would inspire only compassion; did not their stretched necks, their heads twisted to the right or left, their back-bones crooked, one shoulder up to the ears, and a number of other whimsical attitudes, which are the consequence of the disorder, present the most ludicrous and the most laughable picture. A long row of little shops is built against one of the walls of the place where the mosque stands. These shops are shaded by an arbour, which communicates from one to the other;

other; and under which every merchant takes care to place a small sopha for his customer to sit on, without hindering the passage, who place themselves in succession to receive a dose proportioned to the degree of habit and want they have contracted. The pills are soon distributed; the most experienced swallow four of these, larger than olives; and every one drinking a large glass of cold water upon it, waits in some particular attitude for an agreeable reverie; which, at the end of three quarters of an hour, or an hour at most, never fails to animate these machines, and make them gesticulate in an hundred different manners; but they are always very extraordinary and very gay. This is the moment when the scene becomes most interesting—all the actors are happy; each of them returns home in a state of total ebriety, but in the full and perfect possession of an happiness which reason is not able to procure him. Deaf to the hootings of the passengers they meet with, who divert themselves by making them talk nonsense, every one of them firmly believes himself in possession of what he wishes; they have the appearance and the feeling of it—the reality frequently does not produce so much pleasure. The same thing happens in private houses, where the master sets the example of this strange debauch. The men of the law are the most subject to it, and all the Dervises used

used to get drunk with opium before they learned to prefer the excess of wine."*

Dr. C. next recapitulates some experiments made on animals.

Exp. 9. The watery solution of opium poured into the eye of a dog produced similar effects to those before related.

Exp. 10. Half an ounce of the same solution was injected through a very small opening into the abdomen of a rabbit, preventing as much as possible the admission of air. Twenty minutes after the animal was opened, and the surface of the intestines appeared much more red than usual, and apparently inflamed.

Exp. 11. A few drops of the aqueous solution being let fall on the heart of a dog which had been just hanged, and the sternum being removed, the heart having ceased its contractions, these were instantly renewed, and continued for about a minute, and the surface of the heart became unusually red. The application of warm water produced a similar effect in a smaller degree.

* Memoirs of the Baron de Tott on the Turks and Tartars, vol. i. p. 160. In another place he says, " My language-master, of Persian extraction, a great enthusiast in poetry, used to get drunk indifferently with opium or brandy." Ibid. p. 43.

Exp. 12. Having separated by inflation the skin and muscles of the lower extremities of a frog, a quantity of the watery solution was poured between them; both limbs were deprived of the power of motion in about nine minutes; the animal died in fifty-five minutes.

[*To be continued.*]

XXXIX.

A Treatise on the Blood, Inflammation, and Gun-shot Wounds. By the late John Hunter, 4to. p. 575. 1l. 11s. 6d. Boards. Nicol, London, 1794.

PUBLIC expectation will doubtless be highly raised with regard to the work before us. The writings of a man who may be said to have attained the summit of chirurgical fame, will of course be eagerly sought after. The doctrines contained in the present volume are not now to be considered as new; many and even most of them have already found their way to the world. They formed the fundamental part of the Author's Lectures in Surgery during the last twenty years

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of his life, it is therefore not to be wondered at, that they should have been adopted by others, and given to the public, perhaps as original, without acknowledging the source from whence they were derived. Indeed, this is a circumstance which the author complains heavily of in his Introduction. "In this," says Mr. H. "some medical writers have been very liberal, for not contented with taking hints, they have even laid hold of large portions of my lectures, screening themselves under the very honourable protection of their not being in print; and at the same time quoting authors, to shew their reading and their *candour*. It would appear that they consider the discoveries and opinions of a Lecturer, found probably in a manuscript, as fair game; though their delicate attention to the rights of another, would, no doubt, have prevented them from adopting the same doctrines, had they been actually in print."

When it is said, that the principal part of the present work has been composed for so long a space of time, and that during this it has again and again passed under the revision of the author, we are at a loss how to reconcile it with the very incorrect and confused manner in which almost the whole of it is thrown together. We wish not to become verbal critics; if the meaning of an author be clearly conveyed in his language,

language, we may overlook the want of elegance and the neglect perhaps of the strict rules of grammar. But when the sense becomes obscured, and the reader is left frequently at a loss to conjecture what it is the author meant to enforce, the want of attention is inexcusable. That this is the case with the present treatise, almost every page affords proof; the reader is fatigued with endless repetition, and the want of method in the arrangement makes a reference almost impossible. Hard, therefore, is the task of any one that undertakes to give a general and connected account of the whole. From this, however, we shall not shrink; we most chearfully own, that notwithstanding the defects of language, there is an abundance of valuable matter to reward the labour of research.

Prefixed to the work is an account of the life and writings of the author, drawn up by his brother-in-law, Mr. Everard Home, who has not missed the opportunity of blazoning the advantages he himself derived from the instructions of so able a master.

There are many opinions, the author observes, respecting the animal œconomy, peculiar to himself, which are introduced or frequently referred to, in the course of the work. He has therefore judged it necessary to premise a short explanation

of some of them, that the ideas and terms which are employed might be better understood.

Life he believes to exist in every part of an animal body, and to render it susceptible of impressions which excite action. How far every part has an equal quantity of life, or of the powers of life, is not easily ascertained; but if we were to estimate them by their powers of action we should judge tolerably well. Diseases would seem to give some intelligence with regard to this matter; but how far resistance to disease, and power of restoration, depend on the powers of life, or simply on the powers of action, is uncertain; but it probably may be laid down as a general rule, that those parts that are endowed with most action resist disease most strongly, and in disease restore themselves most readily.

Of Diseased Actions, as being incompatible with each other. Every operation in the body being an action, universal or partial, the author conceives that no two actions can take place in the same constitution, nor in the same part at one and the same time. Thus no two different fevers can exist in the same constitution, nor two local diseases in the same part at the same time. What is said of a pocky-scurvy, a pocky-itch, rheumatic-gout, &c. &c. on this principle implies a union that cannot possibly exist. Before one

disease

disease can occupy the place of another, that other must first be destroyed, or it may be superseded for a time, and may afterwards return. A person shall be inoculated for the small-pox, and previous to the usual time of eruption shall be seized with the measles. In this case the variolous fever and eruption will not take place till after the eruption of the measles is completed. Of this the author has seen several instances.

Of parts susceptible of particular Diseases. There are some parts much more susceptible of specific diseases than others. Poisons take their different seats in the body, as if they were allotted to them. Thus the skin is attacked by what are vulgarly called scorbutic eruptions, as well as many other diseases; it is also the seat of the small-pox and measles. The throat is the seat of action in the hydrocephalus and hooping-cough. The absorbent system, especially the glands, are more susceptible of scrophula than most other parts of the body. The breasts, testicles, and the conglomerate glands are most commonly the seat of cancer. The skin, throat, and nose are more readily affected by the lues venerea, than the bones and periosteum, which however suffer sooner than many other parts, particularly the vital parts, which perhaps are not at all susceptible of this disease.

Of Sympathy. This is of two kinds, when applied to the body, natural and diseased. The latter is here only spoken of. Sympathy is either universal or partial. By the former is meant, where the whole constitution sympathizes with some sensation or action of a part: By partial sympathy is meant, when one or more distinct parts sympathize with some local sensation or action. The universal sympathies are various in different diseases; but those which arise in consequence of local violence, are principally three, viz. the symptomatic, the nervous, and the hectic fever. The first is an universal sympathy arising from a local cause, and is the immediate effect of some local injury; the nervous has no determined form nor stages of the disease from the first cause; delirium, spasm almost of all kinds and in all parts, locked jaw, &c. are the symptoms. The hectic fever is also an universal sympathy, arising from a local disease, which the constitution is not able to overcome.

Partial sympathy the author divides into three kinds; the remote, the contiguous, and the continuous. *The remote* is where there appears no visible connection of parts that can account for such effects; such as the pain of the shoulder in an inflammation of the liver. *The contiguous sympathy* is that which appears to arise from the mere contact of separate parts; as the stomach and

and intestines sympathizing with the integuments of the abdomen; the lungs with the chest; the brain with the scalp; and the testicles with the scrotum. *The continuous sympathy* is where there is no interruption of parts, and the sympathy is continued from the irritating point as from a center, so as to be gradually lost in the surrounding parts; and this is the most common of all; an example of it we have in the spreading of inflammation.

Of Mortification.—Mortification is of two kinds; the one without inflammation, the other preceded by it. The second kind is the one here spoken of. Mr. Hunter considers inflammation as an increased action of that power which a part naturally possesses; and in healthy inflammations, there is probably an increase of power; but in inflammations which terminate in mortification, there is a diminution of power. This, when joined to an increased action, becomes a cause of mortification, by destroying the balance which ought to subsist between the power and the action of every part.

With respect to the treatment of mortifications in common practice, it is plain the weakness has been attended to, but the increased action has been overlooked; and therefore the whole aim has been to increase the action, in order to remove

move the weakness. The *confectio cardiaca*, Peruvian bark, *serpentaria*, &c. have been given in large quantities : by which means an artificial or temporary appearance of strength has been produced, while it was only an increased action. The powers of the body are by this means sunk afterwards in proportion as they had been raised, by which nothing can be gained, but a great deal may be lost.

The local treatment has been equally absurd. Scarifications down to the living parts, and stimulants of various kinds are applied ; warm fomentations have been also applied, as being congenial to life ; but warmth always increases action, and is therefore to be cautiously employed.

Upon the principles here laid down, the bark is the principal medicine, as yet known, that we depend on, as it increases the powers, and lessens the degree of action. Upon many occasions opium will be of singular service, by lessening the action, although it does not give real strength. It is proper also to keep the parts cool, and all the applications should be cold.

Having premised thus much, the author enters on the general subjects of the work. *General principles of the Blood.* In our account of this part of the work, we must confine ourselves to such

such circumstances as are peculiar to the author, and such as are less commonly known or understood. The coagulation of the blood being performed by an inherent power in itself, in which it differs from other coagulable substances, the author has thought it necessary to distinguish this by the term *coagulating*, instead of *coagulable* lymph. The circumstances attending the coagulation of blood allow of great varieties. It coagulates more quickly when allowed to flow from a vein slowly, and in small quantities. Blood exposed coagulates more quickly than when extravasated in the cellular membrane, and on the exposed surface, and on the edges of the dish, than any where else. It has been observed that the upper surface coagulates first, forming a thin pellicle; while underneath it remains fluid. Blood usually requires a considerable time for its coagulation, or rather contraction; for if allowed to stand some days, the coagulated part becomes less and less. The blood which is longest in coagulating, coagulates most strongly.

With respect to the cause of coagulation in the blood, neither cold nor heat produces this effect, nor exposure to air, nor rest; there must, therefore, be some other principle on which this process depends, and this must be something within the blood itself. That it does not depend on the action of the circulating vessels, appears from considering

considering that, under certain circumstances, the blood does coagulate in the vessels; nor does death in the body or vessels, in all cases become a cause of coagulation; for we find, that in many who die suddenly, from a strong impression of the mind, and other causes, the blood does not coagulate.

Coagulation, Mr. Hunter conceives to be an operation of life, somewhat similar to muscular action. The coagulating lymph of the blood being common probably to all animals, while the red particles are not, we must suppose it, from this alone, to be the most essential part.

The serum of the blood coagulates on the application of certain substances, and separates into two parts. Serum coagulates by a heat of 160° or 165° ; with spirits of wine slightly. With volatile spirits it coagulates into a milky fluid, which becomes like a jelly upon heating. When mixed with salt of hartshorn, it does not coagulate with heat, but makes a large effervescence; but it forms at length into a jelly or paste, although not a solid one.

It appears that in many cases the serum has much more coagulable matter, than in others; but this does not seem to be regulated by any known laws. Many of the animal fluids which are

are not coagulable by the common applications, yet coagulate on the addition of Goulard's Extract. This is the case with urine. Mr. H. took the aqueous humour of the eye, and first heated it in a spoon, to see what quantity of matter coagulable by heat was in it, and he found it become gently weyish ; but upon adding the Extract to it, it coagulated immediately. The same exactly happened with the water in the ventricles of the brain ; and also with the tears.

Water taken from different dropical persons, in some coagulated slightly, in others considerably, on the application of heat. The liquor amnii had very little coagulable matter in it. On taking the residue of all these, after the application of heat, they all coagulated immediately on putting the Extract of Goulard to them.

Since the red globules are not to be found in all animals, nor are they pushed into the extreme arteries, where we must suppose the coagulating lymph reaches, they would appear not to be the important part of the blood, in contributing to the growth, repair, &c. Their use would seem to be connected with strength ; for the stronger the animal, the more it has of the red globules ; and the strength acquired by exercise increases their proportion. This effect is so well known to feeders of young animals, for the table of the

epicure, that bleeding to lessen the quantity, is immediately practised ; as also debarring the creature from exercise, in order to prevent their increasing, and being carried so far from the heart, as they otherwise would be.

Respirable air has the property of heightening the red colour of the blood to a scarlet ; and this, with its consequences, has been supposed to be the chief or only use of respiration ; but if we suppose the change of colour in the red globules to be all that respiration is to perform, we shall make the red globules the most essential part of the blood, whereas they are the least so. The author thinks it most probable, that the effect of air on the blood is greatest on the coagulating lymph ; and this conjecture is rendered more likely, when we consider, that in animals which have no red globules, respiration is as essential to their existence as in any other.

The author next proceeds to treat of the quantity of blood, and the course of its circulation. After which he speaks of the living principle of the blood.

That the blood has life, is an opinion, which the author says, he started 30 years ago, and taught it for near 20 of that time in his lectures ; it does not therefore come out at present as a

new

new doctrine. To conceive that blood while circulating is endowed with life, is perhaps carrying the imagination as far as it well can go ; but the difficulty arises, he conceives, merely from its being fluid, the mind not being accustomed to the idea of a living fluid. To refer all the changes which are observed to take place in the blood, to the action of the solids, is, he thinks, giving too much to the solids and too little to the fluids. Every part is formed from the blood ; we grow out of it ; and if it has not life previous to this operation, it must then acquire it at the act of forming ; for we all give our assent to the existence of life in the parts when once formed. Our ideas of life have been so much connected with organic bodies, and principally those endowed with visible action, that it requires a new bend to the mind, to make it conceive that these circumstances are not inseparable. The author endeavours to shew, that life and organization do not in the least depend on each other ; that organization may arise out of living parts, and produce action, but that life can never arise out of, or depend on organization. He had long conceived that the principle of life was not wholly confined to animals, or animal substances endowed with visible organization and spontaneous motion : but that the same principle existed in animal substances devoid of apparent organization and

motion, where there existed simply the power of preservation.

He was led to this notion from observing the growth of the chick in the process of incubation. He then observed, that whenever an egg was hatched, the yolk, (which is not diminished in the time of incubation) was always perfectly sweet to the very last ; and that part of the albumen, which is not expended on the growth of the animal, some days before hatching, was also sweet, although both were kept in a heat of 103° in the hen's egg for three weeks, and in the duck's for four. But if an egg did not hatch, it became putrid in nearly the same time with any other dead animal matter ; an egg therefore, must have the power of self-preservation, or in other words, the simple principle of life.

From several experiments it appears, that a fresh egg has the power of resisting heat, cold, and putrefaction, in a degree equal to many of the inferior animals, which exhibit exactly the same phenomena under the same experiments ; and it is more than probable that this power arises from the same principles in both. Similar experiments have been made on the blood, and with similar results.

As in his experiments of freezing whole animals, with a view of seeing whether it was possi-
ble

ble to restore the actions of life, when they were again thawed, he never found life return; the author wished to ascertain, how far parts, were in this respect, similar to the whole; especially since it had been asserted, that parts of a man may be frozen, and may afterwards recover. For this purpose he froze the ear of a rabbit. When taken out of the freezing mixture and cut into, it did not bleed; and a part being cut off by a pair of scissars, flew from between the blades like a hard chip. It soon after thawed, and began to bleed, and became very flaccid, so as to double upon itself, having lost its natural elasticity. When it had been out of the mixture nearly an hour, it became warm, and this warmth increased to a considerable degree; it also began to thicken, in consequence of inflammation. On the day following, the frozen ear was still warm, and it retained its warmth and thickness for many days after.

The same experiment being made on a muscle taken from the leg of a frog, on being gradually thawed, it became shorter and thicker, than while frozen; but, on being irritated, did not contract; yet, if at all elongated by force, it contracted again, and the tendinous expansion covering the muscle was thrown into wrinkles; when

when the stimulus of death took place it became still shorter.

A piece three inches in length being cut out from a straight muscle in an ox's neck, immediately after being knocked down, was placed in a freezing mixture for fourteen minutes. At the end of this time it was only two inches in length. Upon being thawed gradually, in about six hours after thawing it contracted so as to measure only one inch; but irritation did not produce any sensible effect on the fibres. Here then were the pieces of muscles frozen, so as to prevent all power of contraction in their fibres, without destroying their life; when thawed, they shewed the same life which they had before: this is exactly similar to the freezing of blood too fast for its coagulation; which, when thawed, does afterwards coagulate, as it depends in each on the life of the part not being destroyed.

As a heat of 120° excites the blood to coagulate, the author wished to try how far muscular contraction was similar in this respect. He took three pieces of muscle from a sheep newly killed, and put one into a basin of water heated to 125° ; another 98° , the heat of the animal; and the third 55° . The first contracted directly, so as to be half an inch shorter than the other two, and was

was hard and stiff. The second, after six minutes began to grow stiff, and at the end of twenty minutes it was hardly as much so as the former. The muscle in the water heated to 55° after fifteen minutes began to shorten and grow hard. At the end of twenty-four hours they were all found to be of the same length and stiffness.

Here is also a similarity in the excitements of coagulation in the blood, and of contraction in the muscles, both apparently depending on the same principle, namely, life.

Animals killed by lightning, and also by electricity, have not their muscles contracted: this arises from death being instantaneously produced in the muscles, which therefore cannot be affected by any stimulus, nor consequently by the stimulus of death.* In such cases the blood does not coagulate. Animals that are run very hard, and killed in such a state, or, which produces a still greater effect, are run to death, have neither their muscles contracted, nor their blood coagulated; and in both respects the effect is in proportion to the cause†.

* Mr. Hunter conceived that the instant that death took place, universal contraction of the muscles took place likewise in general, which made him use the terms, *stimulus of death*.

† This is the reason why hunted animals are commonly more tender than those that are shot,

In many kinds of death, we find that the muscles neither contract, nor the blood coagulate. In some cases the muscles will contract while the blood continues fluid ; in some the contrary happens ; and in others the blood will only coagulate to the consistence of cream.

Blows on the stomach kill immediately, and the muscles do not contract, nor does the blood coagulate. Such deaths as prevent the contraction of muscles, or coagulation of the blood are, the author conceives, always sudden. Death from sudden gusts of passion is of this kind ; and in all these cases the body soon putrefies after death. In diseases where there is strong action going on, the muscles contract strongly after death, and the blood coagulates strongly.

In addition to these, the author uses some other arguments in favour of the vitality of the blood ; which, as they do not appear to us conclusive, we forbear to quote. His deduction from all these facts and observations, is as follows :

“ This living principle in the blood, which I have endeavoured to show to be similar in its effects to the living principle in the solids, owes its existence to the same matter which belongs to the other, and is the *materia vitæ diffusa*, of which every part of an animal has its portion :

tion: * it is as it were, diffused through the whole solids and fluids, making a necessary constituent part of them, and forming with them a perfect whole; giving to both the power of preservation, the susceptibility of impression; and, from their construction, giving them consequent reciprocal action. This is the matter which principally composes the brain; and where there is a brain, there must necessarily be parts to connect it with the rest of the body, which are nerves; and as the use of the nerves is to continue, and therefore convey the impression or action of the one to the other, these parts of communication must necessarily be of the same matter; for any other matter could not continue the same action.

" From this it may be understood, that nothing material is conveyed from the brain, by the nerves; nor vice versa, from the body to the brain: for if that was exactly the case, it would not be necessary for the nerves to be of the same materials with the brain; but as we find the
nerves

* I consider that something similar to the materials of the brain is diffused through the body, and even contained in the blood; between this and the brain a communication is kept up by the nerves; I have, therefore, adopted terms explanatory of this theory; calling the brain the *materia vitæ coacervata*, the nerves the *chordæ internunciæ*, and that diffused through the body the *materia vitæ diffusa*.

nerves of the same materials, it is a presumptive proof, that they only continue the same action which they receive at either end.

" The blood has as much the *materia vitæ* as the solids, which keeps up that harmony between them; and as every part endued with this principle has a sympathetic affection upon simple contact, so as to affect each other; (which I have called contiguous sympathy) so the blood, and the body, are capable of affecting and being affected, by each other; which accounts for that reciprocal influence which each has on the other: The blood being evidently composed of the same materials with the body, being endued with the same living powers, but from its unsettled state, having no communication with the brain, is one of the strongest proofs of the *materia vitæ* making part of the composition of the body, independent of the nerves; and is similar in this respect, to those inferior order of animals that have no nerves, where every other principle of the animal is diffused through the whole. This opinion cannot be proved by experiment; but I think daily experience shows us, that the living principle in the body acts exactly upon the same principle with the brain. Every part of the body is susceptible of impression; and the *materia vitæ* of every part is thrown into action; which, if continued to the brain, produces

ces sensation; but it may only be such as to throw the part of impression into such actions as it is capable of, according to the kind of impression; so does the brain or mind. The body loses impression by habit; so does the brain; it continues action from habit; so does the brain. The body, or parts of the body, have a recollection of former impressions, when impressed anew; so has the brain; but they have not spontaneous memory, as the brain has, because the brain is a complete whole of itself, and therefore its actions are complete in themselves.

" The *materia vitæ* of the body being diffused, makes part of the body in which it exists and acts for this part, probably for this part alone. The whole, taken together, hardly makes a whole, so as to constitute what might be called an organ; the action of which is always for some other purpose than itself: but this is not the case with the brain. The brain is a mass of this matter, not diffused through any thing, for the purpose of that thing, but constituting an organ in itself, the actions of which are for other purposes, viz. receiving, by means of the nerves, the vast variety of actions in the diffused *materia vitæ*, which arise from impression and habit, combining these, and distinguishing from what part they come. The whole of these actions form the mind; and, according to the result, impress more

or less of the *materia vitæ* of the body in return, producing in such parts consequent actions. The brain then depends upon the body for its impression, which is sensation; and the consequent action is that of the mind: and the body depends upon the consequence of this intelligence, or effect of this mind, called the will, to impress it to action; but such are not spent upon itself, but are for other purposes, and are called voluntary.

" But mere composition of matter does not give life; for the dead body has all the composition it ever had. Life is a property we do not understand; we can only see the necessary leading steps towards it.

" If nerves, either of themselves, or from their connection with the brain, gave vitality to our solids, how should a solid continue life, after a nerve is destroyed? or still more, when paralytic? for the part continues to be nourished, although not to the full health of voluntary action; and this nourishment is the blood—for deprive it of the blood, and it mortifies.

" The uterus, in the time of pregnancy, increases in substance and size, probably fifty times beyond what it naturally is, and this increase is made up of living animal matter, which is capable

ble of action within itself. I think we may suppose its action more than double; for the action of every individual part of this viscus, at this period is much increased, even beyond its increase of size; and yet we find that the nerves of this part are not in the smallest degree increased. This shews that the nerves and brain have nothing to do with the actions of a part, while the vessels, whose uses are evident, increase in proportion to the increased size: if the same had taken place with the nerves, we should have reasoned from analogy. It is probably impossible to say where the living principle first begins in the blood: whether in the chyle itself, or not till that fluid mixes with the other blood, and receives its influence from the lungs. I am, however, rather inclined to think, that the chyle is itself alive; for we find it coagulates when extravasated; it has the same powers of separation with the blood; and it acquires its power of action in the lungs, as the venal blood does. I conceive this to be similar to the influence of the male and female on an egg, which requires air, and a due warmth to produce the principle of action in it; and is somewhat similar to the venal blood coming to the lungs to receive new powers, which it communicates to the body. To endeavour to prove whether the chyle had the power of action in it, similar to the blood, I made the following experiment:

"I opened

"I opened the abdomen of a dog, and punctured one of the largest lacteals at the root of the mesentery, out of which flowed a good deal of chyle; I then allowed this part to come in contact with another part of the mesentery, to see if they would unite, as extravasated blood does, but they did not. However, this experiment, though performed twice, is not conclusive; for similar experiments with blood might not have succeeded.

"From what has been said with regard to the blood, that it becomes a solid, when extravasated in the body, we must suppose that some material purpose is answered by it; for if the blood could only have been of use in a fluid state, its solidity would not have been so much an object with nature. It appears to me to be evident that its fluidity is only intended for its motion; and its motion is only to convey life, and living materials, to every part of the body. These materials, when carried, become solid; so that solidity is the ultimate end of the blood, as blood."

[*To be continued.*]

XL.

A Practical System of Surgery. By James Latta,
Surgeon in Edinburgh. Vol. I. 8vo. p. 505.
7s. boards. Murray, London, 1794.

A SYSTEM of Surgery appearing so soon after that published by Mr. Bell of the same place, and that having been very well received by the faculty in general, excites some degree of surprise. The practice of surgery can never have undergone so great a change in so very few years, as to render a general review of it now necessary. The present work, however, differs in some respects, from that above-mentioned, and particularly in being illustrated by apposite cases, which will perhaps by some be deemed an advantage over the other. In our account of the present volume, we shall confine ourselves to those particulars in which it differs from former systems, and which may therefore be expected to be improvements of the common doctrines and modes of practice.

The work is intended to be comprised in three volumes, the two last of which will appear as speedily as possible. The present volume treats of blood-letting, and its different kinds; of the
advan-

advantages to be expected from blood-letting; and when it ought to be avoided; of accidents arising from blood-letting;—of the opening of abscesses;—of sutures;—of the ligature of arteries;—of aneurisms;—of inflammation, including erysipelas, schirrus and cancer, scrophulous tumors, rickets, mollities ossium, spina ventosa, and white swellings;—of herniæ;—of the hydrocele, and other diseases of the genital organs;—of the stone.

In the opening of large abscesses, a decided preference is given to the method by the seton, as the least likely to be followed by those severe constitutional symptoms, which so frequently take place from the exposure of extensive cavities. When speaking of aneurisms, we are much surprised to find no notice taken of the mode recommended by the late Mr. Hunter, in the popliteal aneurism; viz. tying the artery in the middle of the thigh, without laying open the tumour itself, trusting afterwards to absorption for the removal of it. So many instances have now been published of its successful adoption, that we think it well intitled to a place in modern systems of surgery; at least, it might have been noticed.

The author contends, that in inflammation, instead of an increase of action in the vessels of the

the part, which is commonly supposed to be the proximate cause of the disease; the direct contrary takes place, and that there is a deficiency of action. It is obvious, he says, that in all cases of inflammation, there is, from some cause or other, accumulation, and partial stagnation of blood in the inflamed part. The swelling of the part shews that there is an accumulation, or that the vessels contain more fluids at this time than they did in a natural state. We must remember, that the blood and other fluids are not propelled to the extreme ramifications of the arteries by the mere force of the heart alone. The arteries themselves and every part of every artery, contribute towards this propulsion. If, therefore, any part of an artery loses its contractile powers, the blood can pass through that part only by the force communicated from behind, and must, of consequence, be transmitted with more difficulty, than if the force of that part of the artery had been joined to the rest in propelling it. Hence there must be a partial accumulation of blood, and a detention exactly as in the case of an aneurism; where one part of an artery is rendered weaker than the rest. If we can conceive, therefore, an infinite number of small arteries, each of which is dilated in a certain degree, so as to occasion pain, we have then a distinct notion of inflammation; which, in this

view, must appear rather to consist in a paralyssy, than a spasm of the vessels affected.

On the subject of cryspelas, the author takes notice of the difference of opinion that has existed, and still exists, as to its nature and mode of treatment; but gives us no directions by which we may be enabled to distinguish those which require evacuation, from those which admit of a very opposite treatment, such as the use of bark and wine.

Speaking of cancer, the author relates a case treated by Dr. Hamilton, successfully, by the use of cicuta.

" Of late, the cicuta hath been made use of in cases of cancer, and sometimes appears to have been of service. Dr. Hamilton mentions a case supposed at first to be venereal, but which afterwards turned out to be a true cancer. In consequence of the mistake concerning its nature, mercury had been exhibited with the very worst effect. The patient had been originally of a scrophulous habit, at least allied to those who were so, and from his infancy subject to a red cuticular eruption. The disease attacked the scrotum, where it produced an ulcer of an inch and a quarter in length on the right side, and in a longitudinal direction with the spermatic chord,

chord. The lips were hard, jagged, and but little elevated, the cutis vera was destroyed, when he came under Dr. Hamilton's care, and the sore appeared of a red and fiery colour. In consequence of his supposing it to be venereal, mercury was exhibited both outwardly and inwardly ; and so easily was the patient affected with it, that a salivation was on the point of being produced very rapidly ; so that the exhibition of the mercury was frequently interrupted, and the decoctions of sarsaparilla and mezereon only continued, which had been given along with the mercurials from the beginning. Under this course the ulcer daily became worse, so that in ten days the spermatic chord was laid bare, notwithstanding the use of opium, hemlock, and carrot poultices, &c. In eight days more, the ulcer had passed across the root of the penis, and reached the left side of the scrotum, and in its passage consumed not only the skin and adipose membrane, but an inch of the corpora cavernosa ; the whole penis also becoming very much inflamed and turgid. Finding matters in this situation, the Doctor laid aside the use of mercury, and in its stead exhibited opium, extract. cicut. along with the bark ; but all to no purpose ; the destruction of the penis appearing to be certain, and even the life of the patient in the utmost danger. Recourse was now had to the cicuta bath, which was prepared in the

following manner. Half a pound of the seeds of *cicuta vulgaris* were tied loosely in a bag, along with four large handfuls of the leaves and flowers ; after which they were boiled in a copper vessel in seven pailfuls (eight English gallons) of water, till the quantity was reduced to six. The whole was now put into a wooden trough, along with twelve pailfuls of cold water, and in this the patient continued immersed to the arm-pits for the space of fifteen minutes. By the very first bathing the pain was lessened, and the progress of the ulcer stopped. The second not only diminished the discharge, but changed its appearance, so that, from being sanguous and fetid, it became purulent. As the sore mended, the time of the patient's continuance in the bath was augmented to half an hour or more ; and so rapidly did the cure now proceed, that in a month's time from the first use of the bath he was quite well. The Doctor remarks, that in this case the ulcer did not heal up like wounds or abscesses, with granulations of new flesh, but the sides of the ulcer contracted every day until they became contiguous, after which they united from the bottom upwards : the cicatrix thus assuming a pursed up and unsightly appearance.

“ Where the cancer is situated in such a manner that the bath cannot reach the part affected, Dr. Hamilton recommends the application
of

of the decoction by means of syringes. In the case of a cancer of the rectum, it was directed to be applied by means of a long flexible tube during the time the patient was in the bath, so that he might have the benefit of the medicine both internally and externally. Thus, the decoction may be conveyed into the vagina, or even into the uterus itself, or into the bladder, in all which parts of the body cancers most commonly, if not always, prove fatal."

In cases of hernia, the author says he has always found those injections succeed best which are the least irritating.

" Fumes of tobacco have indeed been highly recommended ; and I have no doubt but that at times they have been found serviceable, both as a purgative and an anodyne. From my own observations, however, I can affirm, that, in hundreds of instances, the use of tobacco smoke has proved altogether ineffectual ; nor has it even been of any use in cases of obstinate costiveness. In short, in all the instances in which I had an opportunity of seeing it tried, during my residence for seven years in the Royal Infirmary, and in a vast many others in my own practice, I never observed it to have any purgative effect, nor even to produce a single stool : The only and never failing effect which it had upon those patients

patients who were obstinately costive was to produce extreme sickness, and not unfrequently vomiting, which I have known to continue for an hour or two before the patient recovered ; and so severe was the sickness occasioned by it, that I seldom or ever could get the same patient to allow me to attempt it more than once. As to its anodyne properties, I can say nothing : but its inefficacy in promoting the first intention was to me a sufficient reason for abandoning it, as well as its augmenting the alarming symptoms of sickness, nausea, and vomiting. A much more agreeable as well as effectual remedy, I have always found to be an injection of a solution of Castile soap, in the proportion of one drachm and an half to a pound of water. This I have injected in the quantity of from one to five pounds, and generally found it very effectual in evacuating, not only the colon, but probably also those of the small intestines which lie betwixt the caput cæci and the constriction. By the use of this I never failed in any one case to evacuate the colon, though in several instances, I have failed, after all, in reducing the gut."

The author objects to the use of warm fomentations to the tumour, but thinks they may be applied with advantage to the abdominal muscles. " Any partial application of warm poultices to the ring itself, or to the tumour, must be hurtful,

as they will increase the swelling of the intestine, and, of consequence, the strangulation. Even, if applied directly to the ring, they cannot relax it, but by the augmentation of bulk, which this tendinous part, as well as all other bodies, receives from heat, must make the stricture greater in some degree than before. They are, however of great service, when applied to the muscular parts, by taking off that spasm which has been already mentioned, not only, as the original cause of the disease, but as preventing the reduction of the intestine. The best mode of applying these fomentations is by some of the largest sized ox bladders, exactly covered with flannel, to prevent any moisture from touching the patient's body, and to cause them to keep the longer warm. Fill those about two thirds full, with water heated to 112 degrees of Fahrenheit, tie them fast, and lay one from the sternum of the patient downwards, with the fundus towards one side, and the mouth towards the other, so that the whole abdomen above the ring may be as much covered as possible. Thus, the spasm of the muscular parts being taken off, we may next put in practice, with the greater probability of success, a remedy prescribed by Dr. Monro, and other eminent writers on surgery, viz. the application of snow or ice* to

* In defect of these, we may use cloths dipped in a recent solution of sal ammoniac in water or vinegar, which is intensely cold.

to the ring and tumour themselves. As these substances, by their extreme cold, cause those parts to which they are applied powerfully to contract, and to shrink up into smaller dimensions, they must naturally diminish the bulk of the tumefied intestine, and thus make it more capable of being reduced ; at the same time, by causing the substance of the ring to contract on all sides, the aperture is thereby augmented, in the same manner as by the contraction of substance in a heated iron ring, the aperture of it will admit of a larger cylinder of iron or other metal when cold than when hot.

In the way above mentioned, viz. by the application of bladders filled with warm water, it is evident that by applying one after the other cools, we may continue the fomentation as long as we please ; and when we have done so, every thing is done which we can do to remove the spasmodic affection of muscular parts. Fomentations seem preferable to general warm bathing, as the latter acts not only upon the muscular parts, but on the ring and hernial tumour also. If, therefore, after continuing the fomentation for some time, we perceive no alteration in the size of the tumour, it is proper again to have recourse to pressure ; but from what has been said, it must now appear evident, that the pressure at this time to be applied ought not only to be equal, but, if possible,

possible, stronger than the force which at first brought on the disease ; nor should it be intermit-
ted, until every attempt that the strength of the
surgeon can gradually make has failed.

" In one case, about seven years ago, where the patient had, by lifting an heavy weight, brought down a great quantity of the gut, every attempt was made for twenty-four hours to reduce it by gentle means, but in vain. Bleeding, injections, and anodynes, assisted by gentle pressure, had been employed to no purpose. At this period, I was called to the patient, and found, that instead of obtaining any relief, the symptoms of strangulation were increasing, and the miserable patient had already consented to the operation. Before this should be attempted, however, I proposed that the effect of strong pressure should be tried ; but, though the surgeon who had attended him from the beginning readily consented, he plainly told me that he did not expect any good from it, as it had been so frequently tried before. However, the experiment was made. Having laid the patient on his back in bed, with two pillows under his breech, and as many under his shoulders, distended his thighs, and bent his knees to an acute angle, we raised his thighs and supported them ; after which I stepped into bed, and placed my knees betwixt his, in such a manner as to be able with them to

press upon the scrotum ; the other surgeon, in the mean time, placing himself by the side of the patient, in order to assist the pressure of the intestine backwards through the ring into the abdomen. I then took the scrotum between both my hands, grasping it firm, and pressing both my knees gently together, but keeping the pressure equal and firm upon my hands, increasing the pressure gradually ; when, having nearly exerted my whole force in this way, the surgeon always pushing in a proper direction, we had the happiness, in less than ten minutes, completely to relieve our patient from his misery, by reducing the hernia.”

XLI.

Caroli Christiani Kransii Facultat. Medic. D. Dissertatio Longam Hominum Antediluvianorum vitam a dubiis vindicans, causasque eam præstantes expendens. Lipsiæ, 1793. Boosey, London, 8vo. p. 80.

THE Treatise above announced is divided into two parts ; the first attempts to vindicate the narration of Moses, with regard to the great age of the antediluvians ; and having, as he

he supposes, sufficiently proved the truth of the facts recorded, the author, in the second part, endeavours to explain the causes which are capable of producing this wonderful longevity.

The former part of the work it is not our province to examine ; and we shall have no occasion to detain our readers long on the latter part. The causes are divided by the author into *final* and *efficient*. With respect to the latter, he observes, that other animals are endowed with a capacity for long life. He instances fishes, several of which have been known to have lived for a very long period of time. Gesner gives an account of a pike, that was caught in a pond near Heilbrun, a city of Germany. In his gills was found a brass ring with an inscription round it in Greek, the translation of which is as follows : “ *Ego sum ille piscis, huic stagno omnium primus impensus per mundi rectoris Frederici secundi manus, die quinto Octobris anno 1230.* ” From which it follows, that this fish lived in this pond 267 years. Other instances of a similar kind are adduced. Amongst birds, the crow and rook are remarkable for long life. Some quadrupeds, as the elephant and stag, also attain to a great age. From all this our author infers, that man is not less endued with the faculty of prolonging life to an extreme length. If, says he, fishes, the lowest almost of animals, are capable of liv-

ing two or three hundred years; if in the latter ages of the world men have been known to prolong life to near two hundred years, where we can trace no *final* cause to be answered; where is the great improbability of some having attained the great age related by Moses, especially when he speaks of few only to whom this happened?

The causes immediately operating to produce longevity must be sought, according to our author, in the moderate exercise of the actions of the body and mind; in the possession of a first germ or stamen, constituted by nature, in the most perfect manner; such as may be supposed to have been bestowed on our first parents; in the proper and salutary use of the *non-naturals*, the effect of which on life and health is evident; amongst other instances, from the example of *Lewis Cornaro*. Added to these, we may mention, the salubrity and fertility of the regions inhabited by the first patriarchs; and the excellent qualities of the waters of the river Euphrates. Whether animal food was in use before the flood, and what influence that might have on the duration of life, is matter of doubt. It is certain, however, that we meet with nothing on the subject, till Noah left the ark, when “every living thing was given him to eat.” (*Gen. c. ix. v. 3.*)

On the whole, we are of opinion, that our author has done very little towards clearing up a point of great obscurity.—Those who doubted before will still doubt. The natural causes, as here assigned, are very insufficient to account for so extraordinary a phænomenon. Those who believe it, must be content to resolve it into miracle, and the will of an Almighty Being.

XLII.

Tyrolensium Carynthiorum, Styriorumque Struma.
A Josepho Gautieri, M. D. Observata et Descripta. Vindobonæ, 1794. 3s. Boosey. London.

IN the work before us, the author treats very fully of the Struma, and of that loathsome affection that is known under the name of Cretins, and which has been described by Coxe and other travellers, as being endemic in certain parts of Germany. Our author confines his observations to the countries above-mentioned. He considers the struma and cretins as different affections, although he allows, that they are frequently combined in the same patient. His descrip-

description of the latter eminently-disgusting disease we shall give as follows :

Monsrum horrendum ingens! — Brutal, stammering, foolish, at least with hardly a trace of memory : low in stature, with a body often larger than it is tall ; in other respects deformed, the legs crooked in various directions ; the head lolling forwards over the breast, and oftentimes of a monstrous size ; lethargic : the orbits of the eyes compressed together ; the eyes themselves watery, turgid, and inflamed ; the iris most frequently bluish, sometimes inclining to grey, or reddish, not of a bright red, for it appears rather as if the dilated veins were scattered over the tunica albuginea : the eyelids contracted, pendulous, tarsus swelled with proptophthalmia ; the lower lid turned outwards as in the ectropium ; sometimes he apparently squints, the eyes being irregularly distorted ; the eyebrows long, thick, and hanging over the eyes, seldom of a black colour ; the forehead depressed with wrinkles ; the nose hooked or flattened, with the alæ depressed, and the hairs hanging smeared with mucus and tobacco, to the use of which he is much addicted ; he is fond of smelling at every thing scented, which he frequently defiles with his nostrils ; his yellow shining hair hanging in disorder over the shoulders ; the cheeks red with the superficial veins distended as if they had been

been injected, flaccid, and wasted ; the skin every where flabby, and on the least touch covered with vibices ; at first view appearing black and dirty, but when rubbed, or in some degree cleaned from the constant filth which covers it, appearing remarkably white inclining to yellow, except those parts which are exposed to the sun and weather ; rough and wrinkled throughout the body, unless where it is put on the stretch by the size of the strumæ underneath ; the lips tumid and thick, especially the upper, often chapped here and there, of a vermillion colour ; the mouth wide and grinning, projecting downwards ; the teeth beautifully white, and disposed in exact order ; the face in general marked by conspicuous lines, scattered over with pustules, which break out here and there ; the chin streaked with the perpetual flowing of the saliva from the corners of the mouth : often a blackish circle under the eyes : the voice hoarse and rattling, sometimes slender, sometimes *Stentorean* : the arms hanging loosely, the joints emaciated ; the hands and feet callous, filthy and varicous ; not only the head and other parts which are covered with hair, but the garments swarm with lice : the tongue so enlarged as to be sometimes, as is said, protruded from the mouth : the fleshy parts every where relaxed and flabby : he shuns the light, and all society, preferring solitude and darkness : the beard unattended to, adding to

to the disgusting picture; the ears are large and frequently very red, the lobes very red, he bends under the weight of a premature old age; the superficial veins varicous throughout the body, but especially those of the legs and head: timid, cautious, and superstitious: sometimes labouring under deafness, or seeming to labour under deafness: not seldom he loathes proper food, whilst at the same time he is greedy after that which is improper: the lower jaw hanging down over the tumor of the neck, with the folds of the skin and cellular membrane covering it like a handkerchief, he fixes his eyes stupidly on the person that asks him a question, which he answers with difficulty; muttering out a few words, and then dropping down his head as if he was seized with sleep: he snores continually, and is vertiginous: often dropical: the maxillary, sublingual, and parotid glands frequently obstructed; now laughing aloud, the next moment relapsing into sadness; every thing within his grasp he seizes and devours with nails like claws: he has scarcely devoured one meal but he is ravenous for the following; he is so continually hungry, that he is never unprovided with some kind of viands about him; slow, thoughtful, filthy, and greedy: he wears a shirt of canvas which serves at once for a covering and a brush to his skin, over this some coarse garment without design or order: his
legs

legs covered with dirt are rarely incommoded with stockings: and if you inquire for his shoes, they are either left at home, lest they should suffer by use, or else he wears those which are torn and ragged, so as to admit the free ingress of mud and filth: he moves with irregular steps, supporting with his hands like a porter, his enormous belly. At length he becomes so fœtid that you are compelled to pass him at a distance, to avoid him on the road. You doubt at last whether to rank him with men or brutes.

The struma and cretinism are rarely observed in cities and towns, they usually invade the inhabitants of the country who live on the sides of the mountains: the rich, and those that use wholesome and sufficient food are seldom affected. The miserable objects above described seem to be possessed of a total indifference with regard to their situation, and this is nourished by the attention that is paid them by their neighbours, who regard them with a sort of religious veneration. “*On seroit tenté, says la Borde (Tableau topographiques, pittoresque, &c. de la Suisse) de leur porter de secours, si on les voyoit capables de sentir des besoins.—Ils ne sont pas malheureux, puisque ils ne le sent, parceq' ils sont bien soignees, & meme respectées dans les Familles, où on les regarde comme des prédestinés préservés du pechê.*”

Having given an account of the very singular affection above described, the author proceeds to give a description of the struma. He observes, that this disease is met with in all countries, but that it may be considered as endemic in particular districts of Germany, Holland, France, Switzerland, and most other countries in all climates, especially in mountainous parts. Hence Juvenal

Quis tumidum Guttur miratur in Alpibus?

The struma Dr. Gautier defines a tumour of the thyroid gland, varying in colour, number, hardness, the quality of the contained matter, figure, &c. From this definition we may remark, that the disease to which the term struma is applied by our author is simply an affection of the thyroid gland, by no means to be confounded with scrophula, which he considers as a very different affection, the distinctions of which from the former he afterwards endeavours to point out.

He is of opinion that struma and cretinism are not hereditary, as many are of opinion; at least so far as his observation goes in the countries he is speaking of. He observes, that the natives of those countries when they remove into Italy are not attacked by these diseases. Those, likewise, who have gone into Italy with those diseases on them,

them, have frequently got the better of them in that happy climate. This however can happen but seldom, on account of the remote situation of Italy from the countries of Syria and Carynthia ; because those affected are amongst the poorer inhabitants, and because they have a superstitious veneration for their own country ; finally, because they meet so many in the same situation with themselves, that the disease ceases to be loathsome in their eyes, while the rest of the inhabitants treat them as superior beings.

That scrophula and struma are different affections our author infers from the following observations: 1. The preceding and concomitant symptoms of scrophula, especially those of the abdomen, do not take place in struma. 2. Struma is a local disease, accompanied by no other symptoms but such as may be attributed to the compression of the tumor.* 3. At the age of puberty scrophula

3C_2 frequently

* Those affected with struma often enjoy a good state of health. When other affections take place, they must be attributed to the compression made on the neighbouring parts. Hence when strumous patients are observed to be stupid and dull, the cause is easily found in the compression of the jugular veins, as well as in the neglect of education. I have seen persons affected with struma to such a dreadful degree that the tumour hung as low as the pubis, so that they could throw it over the shoulders with the same ease that the Lapland women do their breasts; yet these enjoyed the best state of health. Where the tumour was hard in substance the dulness and insensibility were generally greater than when it was of a softer consistence.

frequently disappears ; this is not the case with struma. 4. Struma commonly attacks adults, which scrophula seldom does. 5. Scrophula is apt to return in old age, struma not so. 6. Struma attacks almost every one that resides in those situations, and uses the kind of diet which those patients who labour under the disorder do ; this is not the case with scrophula. 7. Scrophula is found in all situations ; amongst the upper ranks of life, and those who live on the best of food : struma affects only peasants, and those that are ill fed. 8. Struma is dreadfully endemic, scrophula seldom or never. 9. Struma proceeds with stupidity and dulness of the faculties, ending often in cretinism ; scrophula often marks acuteness of the senses. 10. Rickets often attack scrophulous patients with wasting of the limbs, and remarkable softness of the bones ; whilst struma is accompanied with no affection of this kind ; rickets indeed are very rarely met with in those provinces. 11. The causes of the two diseases are different, as is the method of cure. Mercury is esteemed a principal remedy in scrophula, as are alum and the vitriolic acid by some ; on the contrary, those are supposed to produce struma. Again, sponge is an excellent remedy in struma, but not in scrophula. 12. Scrophula frequently goes on to suppuration, struma very seldom. 13. Struma is not an hereditary disease, it disappears with change of climate

mate and mode of living ; on the contrary, scrophula is hereditary, and not to be overcome by change of place and diet. 14. Lastly, because the two diseases are rarely found in combination.

The proximate cause of Struma is supposed to be an increased circulation, with laxity of the solids in the part affected. The remote causes which may induce this laxity of the solids, and which may determine the blood in increased quantity to those parts are next examined. The first circumstance noticed, is, a weak constitution, derived from the parents, which may contribute to give a predisposition to the disease. Neglect of education in bringing up the child, is another cause. What can be expected from a mother who is employed the whole day in providing a morsel of bread for herself and offspring ? from a mother whose words are exceedingly few ; who expresses by no gesticulations the passions of her mind, and who is perpetually absorbed in sleep, when not employed in procuring necessaries. The greatest inattention with regard to the food of the child is shewn, with a total want of cleanliness. Chesnuts are produced in great plenty amongst the Tyrolese, and are eaten by the poorer inhabitants with great avidity. Hence the children are observed in swarms surrounding the trees, greedily devouring equally the ripe and

and unripe fruit. These likewise they make into puddings, which, to a stranger, are exceedingly disagreeable, but are much relished by the natives themselves. The unwholesome nature of this kind of food may readily be supposed. Our author says he has constantly observed that children who live in this way, are covered with pustulous eruptions on the face, neck, and scalp. Hogs flesh is much sought after amongst them, but this is taken in such a dry, hardened state, that it can scarcely afford wholesome nourishment. They greedily devour the fat of the meat, and that without any condiment, not even salt, which might render its digestion more easy. Thus the worst kind of food, and prepared in the worst manner, without any regard to cleanliness, the use of wine of a bad quality, and drinking spirituous liquors to excess, afford ample cause for a vitiation of the whole habit. An exciting cause of struma our author supposes to be, the custom the common people in those countries have of drawing carriages like cattle up the hills, which they do by cords placed over the superior part of the thorax. By the pressure they occasion, and by the frequent impediments to respiration, the blood is prevented from returning with freedom by the jugular vein. The efforts of women in labour are supposed likewise, to give occasion to the disease. Hence the Swiss women are observed to be more frequently affected than the men; the same holds

true

true of the canine species. The same is the case in Savoy. The author confines the term *bronchocele* to that species of tumour of the thyroid gland which arises from the admission of air into its substance, from a rupture, or some imperfection of the trachea.

Exposure to cold, and the drinking of very cold water is reckoned a principal cause of the disease. All the waters the inhabitants use are those which flow down the sides of the mountains, the tops of which being perpetually covered with snow, render those streams of an excessive degree of coldness. The ill qualities of snow water, as productive of the disease, are entirely rejected by our author, any further than as it operates by its coldness simply.

On the method of cure the author is very brief; he lays more stress on the preservative, than the curative means. He insists especially on the avoiding of the remote causes. The curative indications are to be answered by strengthening remedies, wholesome diet, Peruvian bark, and change of situation. Burnt sponge, the mineral and vegetable alkali, are also enumerated amongst the remedies of struma; but what the extent of their power may be, we are not informed.

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XLIII.

CRUMPE'S *Inquiry into the Nature and Properties of Opium*, continued from Page 339.

IN the third chapter the author enters on the subject of the Analysis of Opium, and the effects of its different component principles. His first endeavours were to determine the relative proportion of gummy, resinous, and indissoluble matter the different specimens of opium which he examined contained. He, for this purpose, followed the usual plan of applying distilled water and pure rectified spirit of wine

to different portions of opium, and subjecting the residuum of each menstruum to the action of its opposite, that of water to spirit of wine, and that of spirit of wine to water. By weighing exactly both menstrua previous to their action on the medicine, and after they had extracted all that was possible, and calculating the difference, he endeavoured to approach precision as nearly as possible. The result of his experiments agrees in great measure with the conclusion Dr. Alston had drawn,* who says, that *twelve* parts of opium officinarum contain *five* parts of gum, *four* of resin, and *three* of terrestrial fæculencies. Dr. Crumpe's experiments lead him to conclude that the gummy and resinous matter are present in nearly equal proportions. With respect to the quantity of indissoluble matter, they perfectly agree.

The pure resin, when rubbed between the fingers, had more of the peculiar smell of the opium than the gum; when chewed, it had no peculiar bitterness or pungency. The gum had more the smell of extract of liquorice than opium; to the taste it was extremely bitter and pungent.

Exp. 17. Of the pure resin the author took two grains dissolved in a very small quantity of spirit

* Medical Essays, Vol. V. Art. 12.

spirit of wine, at one in the afternoon, his pulse beating 70 in a minute.

In	5	10	15	20	25	30	35	40	45	50	55	60	65	75	90	Min.
P. beat	78	78	80	78	78	76	70	72	66	65	63	65	63	66		

In fifteen minutes, there was an evident increase in the fulness as well as frequency of the pulse; in sixty, perceived a pleasing languor and drowsiness; in ninety, this was so much increased, that he lay on the bed and slept for an hour; on getting up, found himself languid, very thirsty, and affected with a slight vertigo and lightness of his head; on taking a glass of port wine all these symptoms were relieved, and he ate his dinner with as good an appetite as usual.

Exp. 18. At twelve o'clock mid-day, the pulse beating 70, took two grains of the pure gum dissolved in water; it produced no effect whatever, either on the pulse or any other function.

Exp. 19. Imagining from the preceding experiment, that the gum thus procured was nearly inert, he took, at half past two o'clock in the afternoon of the subsequent day, the pulse beating 72 in a minute, five grains of it dissolved in half an ounce of water.

In	5	10	15	20	25	30	35	40	45	50	55	60	65	75	90	105 min.
P. beat	72	72	74	76	80	74	72	72	72	68	66	64	66	66	62	66

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In twenty minutes, his pulse was fuller as well as quicker ; the heat of the body was raised, and he perceived a manifest increase of spirits ; in thirty-five minutes, found a slight heaviness and pleasing languor coming on, the fulness of the pulse diminishing ; in sixty minutes, perceived his mouth rather dry ; in sixty-five minutes, the dryness, consequent thirst, heaviness, and other similar symptoms, gradually increasing with drowsiness and slight vertigo on attempting to walk ; in one hour and a half, the heaviness, vertigo, and other similar symptoms were still increasing, pulse between 60 and 70, and weaker—thirst urgent. In this state he sat down to dinner ; and it was observed, that he looked as if very drunk. He could not touch above a few morsels of solid food, but took a glass of wine and two of punch, which he imagined somewhat relieved him ; but, in about an hour more the drowsiness and vertigo became so considerable, he could scarcely walk, and the stomach turning suddenly sick, he vomited up the whole of its contents, which immediately relieved every disagreeable symptom ; the drowsiness however, afterwards increased, and he spent the evening in a stupid dozing way, though he took a few dishes of tea—pulse in general from 62 to 70—stomach sickish—sleep in the former part of the night disturbed and confused ; towards morning more sound and refreshing—body costive for thirty-six hours afterwards.

Exp,

Exp. 20. Having by means of gum arabic and sugar, united some pure resin of opium with distilled water, in the proportion of three grains to one ounce, a portion of it was injected between the skin and muscles of the posterior extremities of a frog; the limb was rendered paralytic in about fifteen minutes; the animal was killed by it in an hour and a half.

Exp. 21. Employing the gum in the same manner, it produced the same effects, but more slowly than the resin.

From these experiments then it appears, that the gum of opium, separated from the resin as perfectly as it can be by the usual fluids, though inferior to the latter in point of force, yet retains a sufficient degree of power to affect the system considerably, if given in increased doses. Whether this be owing to the principle which gives activity to opium being possessed, though in different proportions, both by the gummy and resinous parts, or to the impossibility of perfectly depriving the gum of every portion of resin by the effusion of different menstrua, may seem doubtful; to the author it seems probable, that the resinous part is that alone which possesses activity, and that the gum serves principally to give it solubility in the gastric and intestinal fluids.

To

To determine the degree of volatility of the active part of opium, a point of consequence in the pharmaceutic treatment of this substance, several experiments were made and repeated. From which it appears, that spirits of wine, distilled off from opium, carries with it none of the active parts, and shews no sign of any impregnation whatever.

Exp. 23. Having triturated one ounce of opium with one pound of distilled water, he put them into an alembic, and applying a brisk fire, drew off about four ounces of a clear fluid, which was extremely nauseous, possessing a good deal of the peculiar smell, though but little of the taste of opium, but being much more disagreeable. This was particularly the case on its being drawn off; it became less so on standing for some days. He then added, through a perforation in the head of the alembic, four ounces of distilled water, and again drew off an equal quantity similar in appearance to the first. This was repeated until two pounds of water had been added and drawn off; the last portion of which, being forced over by a very smart heat, shewed on its surface a thick film, but so inconsiderable in quantity, it could not be collected; it adhered to the side of the glass in which the liquor was received; and when rubbed with the fingers, felt and appeared like a butyraceous or tallowy matter:

ter: the glass could not be well cleaned by water, though easily and completely by spirit of wine. There now remained about eight ounces of fluid in the alembic, when raising the fire still further, so as to make it boil up to the head, he drew off about two ounces of a whey-coloured fluid, more nauseous than any before obtained, and leaving still more of the butyraceous matter adhering to the glass. The liquor remaining in the alembic, on cooling, though intensely bitter, had lost a great deal of the peculiar smell and taste of opium. Having filtered it, he infused the residuum in four ounces of spirit of wine, and found it extracted about five scruples of resin, which he obtained by evaporation in a water-bath.

Three grains of this resin being taken raised the pulse from 70 to 75, and affected the head slightly. They were taken at mid-day, and did not induce sleep, or impair the appetite.

Thus it appears, that the active principles of opium, though fixed in the heat of boiling spirit of wine, are volatile in that of boiling water; and that in all the preparations of this medicine, its efficacy will be impaired in proportion to the degree of heat it is exposed to. Desirous of ascertaining what the real powers of the distilled water

water of opium were, the author had recourse to the following experiments:

Exp. 26. About twelve o'clock, being in perfect health, took *ten* drops of the distilled water of opium, which produced not the smallest effect. The succeeding day he increased the dose to *twenty*, and on subsequent days it was augmented to *half an ounce*; but in no instance did it shew the slightest appearance of activity.

Exp. 27. He gave to a healthy young man *two ounces* of the distilled water, which produced no effect whatever.

Exp. 28. Having mixed *six ounces* of the distilled water with some bread and milk, gave it to a dog; he shewed no signs of uneasiness, drowsiness, or any other of the usual effects of opium.

Exp. 29. Having separated by inflation, the skin and muscles of the posterior extremities of a frog, he injected some of the distilled water between them; it neither produced insensibility of the limbs, nor any other effect.

From these experiments it would seem that the distilled water of opium is perfectly inert.

The author next gives us an historical view of the various opinions entertained by different writers respecting the mode of operation of opium. Here we have recited the opinions of the Galenists and Chemists, the former asserting that it was of a cold, the latter of a hot nature. These, however, are not worth entering into. To these succeeded the hypotheses of the mechanical sect. Opium was by some supposed to rarify, by others to condense the blood. From these opposite assertions, consequences perfectly similar were deduced; in both instances the nerves at their origin, it was imagined were compressed; according to the former hypothesis, from the immediate rarefaction of the circulating fluid; according to the latter, from the free circulation of the blood through the minute vessels of the brain being impeded by its condensation, or coagulation. To the nervous compression thus supposed to be induced, all the more obvious effects of opium, as insensibility, stupor, sleep, &c. were referred. By some it was supposed, that the more minute and volatile parts of the medicine entered directly the extremities of the nerves dispersed on the stomach and intestines, and were through them conveyed to their origin in the brain. Here it was imagined, that they disturbed or totally impeded the free and equable motion of the nervous fluid, or animal spirits. By many it was attributed to the adhæ-

five nature and great tenacity of the ultimate particles of the medicine, completely obstructing the cavities of the nerves. Others supposed these particles to be in shape similar to hooks, arrows, &c. which sticking in the internal membrane of the nervous cavity, drew its sides together and thus obstructed the passage.

With respect to the different opinions as to the operation of opium entertained at the present day, these are divided into three classes. *First*, those which ascribe its effects to changes induced by it in the blood: *Second*, those which deduce them from its action on the living principle as a sedative, or sedative and stimulant conjoined: and the *Third*, comprehending the sentiments of such as attribute to it the properties of a stimulant alone.

The first opinion had nearly become obsolete, till revived of late by the celebrated Abbé Fontana, who asserts,* and attempts to prove by numerous experiments, that the nervous system is totally insensible to the action of opium; that injected into the blood vessels, it produces considerable and visible changes; and to such alone are all its effects to be ascribed. This opinion the author combats, we think with much success.

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* *Traité sur le venin de la vipere, &c.*

He then enters into an elaborate review of the opinions entertained by Mr. Hunter, respecting the vitality of the blood, which he endeavours to refute. Our limits will not allow us to follow him in this part of the subject.

With regard to the second opinion, that the effects of opium are attributable to its action on the living principle, as a stimulant and sedative combined, the author remarks, that opium cannot be separated into any two principles endowed solely with the opposite qualities of a stimulant and sedative. The principal argument on which those who attribute to this medicine both stimulant and sedative qualities rely, is deduced from its being found first to increase, and afterwards diminish the frequency of the pulse; but this effect can be explained in a much more satisfactory manner; so that there is no necessity of resorting to a supposition, rendered highly improbable from considering, that we know of no simple in the whole Materia Medica possessed of powers in their nature opposite, and operating, when it is exhibited, separately and distinctly. But even granting that opium is endowed with these contrary qualities, it will be difficult to explain on such data the consequences of its exhibition; for as the effects of such exhibition are supposed to be diametrically opposite, it naturally follows that one must counteract the other, and hence if

both exist in equal proportions, the medicine would turn out perfectly inert; if one preponderates, it will act solely in consequence of the excess of that principle, and to it alone, whether sedative or stimulant, will all its effects be ascribable.

If therefore it can be made appear that opium is endowed with stimulant properties, Dr. C. looks on it as a sufficient proof that it cannot possess a sedative power as a primary quality. That opium operates as a stimulant he thinks is sufficiently apparent from an observation of its effects upon the body in a state of health. Applied to the tongue, its taste is pungent and heating; dissolved in water, and poured into the eye, it induces pain, heat, inflammation, and increased secretion from its glands; applied to inflamed and excoriated parts, it proves painful and irritating; dropped on the hearts of animals, it accelerates their motions, or rouses them into action if they have previously ceased to vibrate; and taken internally, it quickens and strengthens the contractions of the heart and arteries, increases the heat of the body in general, augments perspiration or induces sweat, excites a disposition to venery, and gives temporary vigour to body and mind. These effects, the author thinks, can only be referred to a stimulant property. That it shews manifest signs of the same

same property when operating upon the system in a diseased state is equally evident. In the latter stage of typhus fever, attended with delirium, subsultus tendinum, and other symptoms arising at that period from the great debility of the system, like wine, the volatile aromatic spirits, and other stimulants, either alone or in conjunction with them, opium has the most salutary effects. In intermittents, when given at the approach of a fit, it has frequently put by the paroxysm. In the confluent small-pox it is equally useful with wine and other cordials. In proof of all this, Dr. Crumpe adduces the authority of the most respectable practitioners.

Further proof of the stimulant power of opium he thinks is afforded, by considering its injurious consequences, when exhibited in diseases of the inflammatory kind. The truth of this is allowed even by those who consider it as a sedative, which is certainly an inconsistency.

Another argument is afforded from considering, that when custom has rendered its employment absolutely necessary, if any accident prevents those in so unfortunate a situation from obtaining a sufficient supply, the bad consequences resulting from such deficiency can only be obviated by the frequent and liberal use of other powerful stimulants. Of this fact a striking instance

instance is related by Acosta, and thus transcribed by Dr. Alston in the Edinburgh Medical Essays* : " There were," says he, " some Turkish prisoners and Arabian captives in the ship in which I returned from the Indies to Portugal, who had a small quantity of opium concealed, and used it only as a medicine. When they had consumed it all, one of them, a Turk of Aden, said to me, since you have the care of the sick, I must let you know, that unless you give me and my companions opium, we cannot live two days. I denied I had any ; the only remedy then, said the Turk, whereby we who have been accustomed to eat opium can be recovered, is by a draught of pure wine every morning ; though this is very hard and uneasy to us, as being contrary to our law, yet since our health depends upon it, we must submit. By his advice, I gave them all wine ; they recovered, and in a month's time would take no more wine, and neither needed nor desired opium." Prosper Alpinus, during his long residence among the Egyptians, remarked, that many who accustomed themselves to chew opium constantly, if but deprived of it but for a single day, became languid, dejected, and uneasy at the customary hours of taking it, and could only be roused from this state by the usual quantity of opium, or by a large

* Vol. V. P. 1. Art. 12. Sect. 3.

large draught of wine, rendered still more powerful by the addition of pepper and other aromatics: “*Animi siquidem,*” says he, “*deliquo fastidiosissimō tentantur, nulloque auxilio sic tuta liberantur, quam rursus opium devorantes.* Multos ab hac servitute liberatos vidi, si, in hora qua soliti sint ipsum capere, largius ex vino Cretico, pipere, atque aliis aromatibus alterato, potent.”

On the other hand it has been urged as an objection to this explanation of the properties of opium, that when applied to different parts of living animals, it is *immediately* productive of total insensibility, immobility, and loss of life, although no symptom of increased excitement precedes these effects. This objection the author answers by shewing, that many other articles, universally acknowledged to be endowed solely with a stimulant property, are productive, in similar circumstances, of those effects, which, when induced by opium, are reckoned the consequences of a directly sedative quality alone. In illustration of this many experiments are brought forwards. From these it appears, that spirit of wine, and the volatile alkali, destroy, even more speedily than opium, the mobility and sensibility of the parts to which they are immediately applied.

Notwith-

Notwithstanding, however, the question has been discussed with great ability by the ingenious author, still we do not feel ourselves satisfied with his explanation of the effects produced by opium. That it is not simply a sedative operation which it exerts, we perfectly agree with Dr. Crumpe; but it by no means follows, that it must therefore be considered as a simple stimulant. Many of the experiments adduced in favour of its stimulant operation do not appear to us conclusive. Such are the three first experiments, and also the 9th, 10th, and 11th; the effects produced in these instances would have been equally produced, in all probability, by any other resinous solution. The term *diffusibility* which is so frequently used, to explain the difference between the effects of opium and other stimulants, a difference which they could not but perceive, does not at all, in our opinion, elucidate the matter. The effects produced by opium differ so very materially from those of simple stimulants, which, with the exception of alkohol, can in no quantity, and by no kind of management, be made to produce that inebriation and stupor, which the former so readily excites, that we have no hesitation in referring it to a specific difference in their operation, however little this may be understood. The class of Narcotics seem to produce effects on the living system peculiar to themselves, and which are not at all dependent
on

on stimulant properties, and not at all to be imitated by the exhibition of those substances of a simply stimulant nature.

The subject of the last chapter is the pharmaceutical treatment of opium, and its use and abuse in particular diseases.

As it has been shewn that the virtues of opium reside in a principle capable of being volatilized in the heat of boiling water, at least that this degree of heat is capable of destroying in part its activity, and as the proportion of fœculencies varies very little in the different parcels brought to market, that method of purification is best which least requires the application and continuation of heat. The process of straining, as ordered in the former edition of the London Pharmacopœia is perhaps the best. It may, however, perhaps be still farther improved by employing, as a menstruum, proof spirit in place of water, and in the same proportion; which would both serve to keep the gummy and resinous parts more uniformly suspended, and require a heat for its dissipation less injurious to the medicine than the same quantity of water would.

The following general observations on the exhibition of this medicine, as exceedingly judicious, we shall transcribe.

" In the exhibition of opium, we should ever keep in view, not only the constitution and habit of the patient, but the intention with which the medicine is at the time prescribed ; a caution which has, I fear, been too much neglected, and which has led many to imagine, that it was only productive of temporary relief in cases where, if properly managed, it may tend more than any other medicine to the complete removal of the disease : for, however considerable the variety of those diseases be, in which opium has been recommended, it must be exhibited in all, either as a stimulant or anodyne. The mode of its exhibition, however, should differ materially, when given with one of these intentions, from that to be pursued when the other is to be kept in view ; for, as its exciting power, though diffusible and considerable, is speedily exhausted, it should not, when prescribed with a view to its stimulant effects, be given, as the other more durable stimuli sometimes are, in large doses, and at considerable intervals, but in moderate quantities frequently repeated, at the interval of a few hours, as the symptoms of the complaint may require, and conjoined with a proportionable quantity of other stimuli more durable in their effects. The precautions, however, arising from these considerations, seem very frequently neglected. How often is the physician satisfied with prescribing his *haustus anodynus herâ sonni*, in cases

cases which require their reiterated exhibition in the course of twenty-four hours, and in which the transient relief procured by one draught, would be rendered permanent by the same medicine more frequently repeated."

" In such complaints, however, as are accompanied by urgent pain, irritation, or watchfulness, and opium is given with an intention of mitigating or removing them, a contrary plan is to be pursued, and the medicine given in a pretty considerable dose; which need not be repeated for a much greater length of time than in the former instance; by which means the system will be best thrown into that state of insensibility, on the production of which its anodyne effects depend. The additions made to opiate draughts, are usually of a stimulant nature, and are sometimes requisite to make the medicine remain upon the stomach. No more than what is necessary for this purpose, should, however, in these instances be prescribed; as, by the greater durability of their stimulant effects, such may prevent the medicine from proving anodyne to so great a degree as if given by itself. Particular rules I avoid, both with respect to the doses, and intervals between them; they vary so much in different cases, that the practitioner's own judgment, guided by the effects preceding doses may

have produced, and the more quick or slow return of urgent symptoms, must usually direct him."

The use of opium in fevers of the typhus kind is illustrated by the following case.

" C. G. a married woman, aged about thirty, and in the fourth month of her pregnancy, had been exposed to the contagion of fever, and was very soon after seized with its usual symptoms. I was called to her assistance the seventh day of her illness, previous to which little or nothing had been done, except injecting a clyster now and then, as her body had been bound. I could obtain no satisfactory account of the previous progress of the disease, except that she had been in general restless; but found her in the following situation: Her pulses beat 120 in a minute, and were very weak; her tongue foul and dry; thirst urgent; skin hot eyes languid; and she lay on her back in a state of apparent stupidity. When any questions were put to her, she was made answer them with difficulty, not wishing to be disturbed; and her answers, when extorted, were frequently incoherent. Twenty drops of Thebaic tincture were immediately given in about an ounce of Port wine, and a similar draught was prepared, with fifteen drops, to be taken in case she should not fall asleep in a few hours,

hours. A mild clyster was injected, which soon operated; she was ordered a slight solution of crystals of tartar in water, sweetened, as drink; and a free circulation of air was obtained, by throwing open a window at some distance from her bed. The next day, being the eighth of her disorder, I called on her early, and found that the first draught had soon thrown her into a sound sleep, which continued about six hours; out of which she awoke, as she said, somewhat refreshed, but some time after fell into a state of low muttering delirium, which still continued. The second opiate had not been given—her pulse was still 120; and there was little alteration in the other symptoms. She was ordered to take a table-spoonful of Port wine, mixed with an equal quantity of water, every second hour. A second draught, with thirty drops of Thebaic tincture, was given her, and by these means the delirium was soon removed; though she did not fall into a sound sleep till about eight in the evening, when, as I did not wish to disturb her, no opiate was given. Having slept till near midnight, she awoke very restless and uneasy; and, in the course of an hour after miscarried, with very little pain. I was sent for, and finding the haemorrhage still continue, ordered cloths wet with cold water and vinegar to be applied to the pudendum, which soon restrained it:—her pulse was 130. The wine was ordered to be omitted
for

for some time, and an opiate draught, with thirty drops of Thebaic tincture was given her; in consequence of which she soon grew easy and fell asleep, when I left her: she grew delirious by morning. At ten I again visited her, and found the pulse 135, and very weak, the delirium still continuing; tongue dry, foul, and scaly; face pale; skin, particularly of the extremities, rather cool; eyes languid; and a tremulous motion of her hands was perceptible, which soon increased to a beginning subsultus tendinum. Finding that, if some efficacious method was not pursued, the worst consequences were soon to be expected, I instantly gave her a tea-cup full of port wine warmed, containing forty drops of tinct. thebaica, and twenty drops of the spiritus volatilis aromaticus. The wine was ordered to be given in doses of two ounces every second hour; and a julep was prescribed, of which one ounce was to be given, if necessary, every fourth hour, which contained fifteen drops of Theb. tincture. By two, a manifest change for the better was observable, when she took a dose of the julep; the hæmorrhage had not returned, the subsultus had disappeared, and but a slight degree of tremor remained. The pulse was 125, and much stronger; the skin all over the body warm, and gently moist; the delirium very much abated, and the patient composed; but the thirst still remained urgent: she had some sleep in the day, during which she took no more of the opiate

opiate till ten in the evening, when two ounces of the julep were given her; these procured her a good night's rest. Next day, the tenth, her pulse was but 115 and pretty strong, skin gently hot and moist, thirst less urgent, and tongue growing moist at the edges; delirium and tremor entirely removed, and countenance more natural; and, in the course of two days more, she was restored to a state of convalescence, by gradually diminishing the opiates, and persisting in giving moderate quantities of wine."

The utility of opium in the other affections here spoken of, we believe to be too generally known, to need our being more particular.

XLIV.

Transactions of the Royal Humane Society. By William Hawes, M. D. Senior Physician to the London and Surry Dispensaries, &c. London, Printed and sold for the Society, by Rivingtons, &c. 8vo. p. 633. 1794. Price 10s. 6d. half bound.

THE present volume comprises the Transactions of the Society originally instituted for the recovery of drowned persons, from its commencement

mencement in 1774 to the year 1794. The editor observes in the introduction, that a detail of the proceedings, those of the last three years ending in 1793 excepted, has already been communicated to the public in various and different periodical reports. These are now continued down to the present year.

The arts and modes of destroying life, he well observes, have been cultivated from the first ages of the world; the ingenuity, the industry, the wealth, the science of mankind have been lavished on the improvement and perfection of these horrid arts. It is to be earnestly hoped, that the zeal and ardour, manifested by all ranks to promote the views of the Society, may tend to vindicate human nature, and evince to the indignant satyrift of human actions, or the rigid censor of human manners, that man is far more emulous to save than to destroy his fellow men.

The editor gives us an outline of what may be termed the history of this branch of medicine. "In the writings of the antients, we cannot discern the faintest glimmerings of their having any kind of knowledge, that all the vital powers could remain in a state of suspension. At the same time, we mean not to detract from those praises, which so justly belong to them, for their judicious cultivation of the medical art.

art. We think, that they have pointed out the best or rather the only path, that leads to an accurate and useful knowledge of diseases.—We perfectly agree with the learned Dr. Friend, who in his preface to his edition of Hippocrates de morbis popularibus, has truly described the appropriate excellence of the antient medical classic authors, an excellency destitute of which medical writings are little more than works of amusement, addressed to the imagination, not to the reason.—‘ *Ii potissimum elaborarunt, ut morborum historias accurate describerent, signorumque discrimen et ipsi diligenter notarent, et aliis differte distin^cteque explicarent.*’—But it is among the moderns we are to seek the origin of the doctrine of resuscitation. About the middle of the present century, the penetrating genius of a countryman of our own, of revered and esteemed memory, Dr. John Fothergill saw the dubiousness and fallacy of the received criteria of dissolution, in a paper addressed to the Royal Society, and recorded in their Transactions, he maintained the possibility of saving many lives without risquing any thing.”

“ Strange and unaccountable as it may appear to the enlightened and philanthropic reader of the present day, the subject, closely as it is pres-

sed to the bosom of every individual, drew no attention from the learned or philosophical world."

" It is indeed a most striking and lamentable example of the unbounded power of prejudice over the human mind*.—The absurd and pernicious idea still prevailed in unabated force of presuming death to ensue the moment that respiration ceased.—Temerity and ignorance guided by prejudice still continued to ravage the human species.—Man still persevered in being the executioner of innocent man, and numbers were still consigned to that most horrid of deaths, a subterraneous one."

" The glory of making the first experiments of this important theory proposed by an Englishman was snatched from us by foreigners. The first instances of resuscitation occurred in Switzerland in 1767. M. Reaumur, well known by his ingenious theory of *animal instinct*, was the person who made the reports of these cases to the Academy of Sciences at Paris.

Shortly

* The first tract which we have heard of, published on this subject, was printed at Rome, and entitled, *La Senz (Petri) Dissertatio: cui Titulus est, Combrotus, sive de iis, qui in aquis pereunt.* Rome, in 8vo. 1638. The French Memoirs mention two more before the year 1700.

Shortly after this a Society for the recovery of the drowned was instituted at Amsterdam. The Memoirs of this Society were translated in the year 1773, by Dr. Cogan, a learned and judicious physician. This first engaged the attention of the writer of the present work to the subject. In the following year, the Royal Humane Society was established, 1774. The principles, as first introduced into this country, from the practice of our *continental neighbours*, were for the chief part confined to the recovery of drowned. They are now extended to, and comprehend, every known species of apparent sudden death. The resuscitative process has been often applied with happy success, to counteract the fatal effects of a most heinous crime, said by foreigners, to be almost peculiar to this country,—Suicide."

"The very idea of the possibility of being restored, or brought back to life, must operate to repress the audacious and impious hand of him, who is eager to hurry out of existence. There is another cause of apparent dissolution, which the ungrounded fears of superstitious prejudice seemed still to dread,—Lightning: the fortitude, perseverance, and skill, of one of the medical assistants of the Society, a gentleman distinguished by his benevolence and professional

knowledge*, has furnished a living example of the practicability of restoring persons stricken apparently dead by lightning.—This has been followed by two similar cases of resuscitation.”

“ The transactions contain the facts, that exemplify and substantiate these observations.”

Besides a great number of cases, where the means recommended by the society for the restoration of life have been put in practice, and in a large proportion with success, the work contains an abstract of several of the most valuable and interesting publications which have appeared on the subject of suspended animation. It is to be lamented, that practitioners are not altogether agreed with regard to the utility of some of the most powerful agents usually employed in cases of this description, such, for instance, as blood letting, and the injection of the fumes of tobacco *per anum*. These had been employed in a great number of cases, and, as far as it was possible to form a judgment, with the most decidedly good effects; yet this practice has of late been called in question, and even reprobated, as of the most pernicious tendency. It is, however, to be observed, that this is done solely on theoretical principles; it is not, therefore to be imagined, that

* John Milward, Esq.

that means so powerful, and which have so often succeeded in the hands of very judicious practitioners, will be hastily laid aside. A summary of the different modes of treatment, according to the different kinds of apparent death, is here presented us by the industrious editor, under the heads of submersion, suspension by the cord, suffocation by noxious vapours proceeding from coal-mines, caverns, and fermenting liquors, intoxication, lightning, and intense cold.

“ 1. The restoration of heat is essential to the return of life: therefore, on the body’s being taken out of the water, it must be covered with *clothes, or a blanket,* and conveyed to the nearest receiving-house, with the head a little raised. In the *cold season,* it should be laid on a bed, in a moderately-heated room. In *summer,* exposed to the *rays of the sun,* and not more than *six persons* admitted. The surface of the body is to be dried with flannels, sprinkled with spirits, mustard, or other potent stimulants. Fomentations of brandy applied to the breast. A *warming pan covered with flannel* should be lightly moved up and down the back and spine; *bottles with hot water,* and *heated tiles wrapped up in flannel,* are to be applied to the feet, palms of the hands, &c.”

“ 2. Ref-

" 2. Respiration will be often promoted by closing the mouth and one nostril, while, with the pipe of a bellows, you blow into the other with sufficient force to inflate the lungs ; *another person* should then press the chest gently with his hands, so as to expel the *effete air*. If the pipe be too large for the nostrils, the air may be blown in at the mouth. Blowing the breath of a person can only be recommended when bellows cannot be procured."

" 3. The bowels should be inflated with the fumes of *tobacco*, repeated three or four times within the first hour ; but, if circumstances prevent the application of this useful vapour, then clysters of the herb, or other *acrid infusions of salt*, may be repeatedly thrown up with advantage. The fumigating machine has been lately so much improved as to be of great importance in the process of resuscitation ; therefore the Humane Society has recommended its immediate use in all cases of suspended animation. The medical assistants of this institution find that the apparatus answers the important and valuable purposes of *fumigation, inspiration, and expiration.*"

" 4. Agitation : one or more of the persons employing the means should take hold of the legs and arms of children, and shake their bodies ; which may be repeated by the assistants several times

times within the hour. When the apparently-dead bodies of *young children* have been well dried, they should be immediately placed in bed between two persons, and the friction, with warm flannels, &c. chiefly directed, in this case, *to the left side*, when it will be most likely to excite the motion of the heart, and the return of life."

" 5. If one hour is elapsed, and there be no signs of animation, and any brewhouse or bakehouse be in the neighbourhood, the body should be placed in *warm grains, or ashes*, little exceeding that of healthy persons. If so fortunate as to obtain a warm or vapour bath, it should be employed in conjunction with the earliest modes of resuscitation."

" 6. Electricity will increase the beneficial tendency of the restorative means. ' The electrical shock,' says Mr. Kite, ' is to be admitted as the test of any remains of animal life; and, *so long* as that produces *contractions*, the person may be said to be in a *recoverable* state: but, when that effect has altogether ceased, there can no doubt remain of the party being absolutely and positively dead.' Dr. A. Fothergill observes: ' Where the vital organs are found, and only *their motion suspended*, why not have immediate recourse to the most *potent stimulus*

• stimulus in nature, which instantly pervades the
• inmost recesses of the animal frame?"

• Why not immediately apply *electrical shocks*
• to the brain and heart, the grand sources of
• motion and sensation, the *primum vivens et*
• *ultimum moriens* of the animal machine?"

" 7. If there be convulsions or other signs of life, a *tea-spoonful of warm water* may be put into the mouth; and, on the power of swallowing being returned, warm wine or brandy and water may be given. When this gradual approach towards resuscitation is observed, the person is to be put into a warm bed, and, if disposed to sleep, give no disturbance to the patient, as on waking he will generally appear well and perfectly restored."

HANGING.

" 1. If a medical assistant or other practitioner be present, let him take a few ounces of *blood from the jugular vein*; leeches may be applied to the temples; cupping-glasses also to the head and neck.

" 2. The other methods of treatment are to be applied exactly in the same manner, by practitioners, &c. as recommended for the recovery of the apparently-dead by drowning."

SUFFOCATION

SUFFOCATION BY NOXIOUS VAPOURS OR LIGHTNING.

“ Throw cold water often and repeatedly upon the face and body. As the heat of the unfortunate object is above that of a living person, it will be more effectual if the fluid be thrown at some little distance, and with a considerable degree of force, letting the body be dried at intervals. But, if it *feels cold*, apply moderate and gradual warmth, and employ the means directed under the head of the drowned. A small quantity of blood may in some cases be taken away, but only by the direction and advice of the medical assistants, &c.”

FROST.

“ The body on being discovered is to be taken to the nearest receiving-house, but not carried near the fire. Rub it with snow, ice, or cold water. Flannels, sprinkled with spirits or volatiles, may also be employed. In a word, attempt warmth and excite breathing by slow degrees, in the way directed for the recovery of drowned persons.”

STILL - BORN INFANTS: CHILDREN SMOTHERED UNDER BED-CLOTHES OF TURN-UP BEDSTEADS, &c.

“ 1. In still-born children, blow air into the mouth through a quill, &c. till the breast be a little

little raised; then gently press the chest. Rub the body with warm flannels; and foment the feet, breast, and abdomen, with diluted spirits."

" 2. When smothered, expose the body to a stream of *fresh air*, and *cold water* should be thrown on the face and breast. Inflate the lungs, &c."

INTOXICATION.

The head to be raised, and every kind of pressure removed. Emetics must be administered in very large doses, for the evacuation of the noxious liquor or opium, if they shall have been recently taken; and it is probable that the stimulus of vomiting, though too late for the expulsion of those substances, would nevertheless powerfully retard their sedative effects on the system. The patient, also, must by no means be suffered to sleep.

The society have announced the following as the subjects of their prize questions to be adjudged at the commencement of the year 1797; the first, we think, with peculiar propriety.

" 1. Whence is it, that the resuscitative art restores animation in some cases, and not in others, the processes employed being precisely the same, and the apparent circumstances afford-

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ing no adequate reason of the failure or the success?"

" 2. What is the best method of treating that death-like syncope, which supervenes floodings and other profuse hæmorrhages?"

" 3. How may electricity be most efficaciously conducted in the resuscitation of the drowned, the otherwise suffocated, and all the varieties of suspended animation?"

XLV.

A Treatise on the Blood, Inflammation, and Gun-shot Wounds. By John Hunter. Continued from Page 362.

IN the second chapter the author treats of the vascular system, and first offers some general observations on muscular contraction and elasticity. We must confine ourselves to a few of these and such as are more peculiarly his own. Mr. Hunter believes, that muscles, under certain circumstances, have a power of becoming longer, almost immediately, than they are

are in their natural relaxed, or even the natural elongated state of their fibres. Muscular contraction has been generally supposed to arise from some impression, which is commonly called a stimulus; Mr. Hunter doubts, however, of an impression being always necessary; and believes that in many cases the cessation of an accustomed impulse may become the cause of contraction in a muscle. The sphincter iridis of the eye contracts when there is too much light; but the radii contract when there is little or no light. He can even conceive that a cessation of action requires its stimulus to produce it, which may be called the stimulus of cessation; for relaxation is not the state into which a muscle will naturally fall upon the removal of a continued stimulus; a muscle remaining contracted after absolute death, when the stimulus of relaxation cannot be applied; so that a muscle can as little relax after death as it can contract, being alike indifferent to either state. Whatever becomes a stimulus to one set of muscles, becomes a cause of relaxation to those which act in a contrary direction; and whatever becomes a stimulus to one part of a muscular canal, where a succession of actions is to take place, becomes also a cause of relaxation in the part beyond it, as in an intestine.

The relaxed state of a muscle would appear in general to be the most natural; but to this there are exceptions; a degree of contraction appearing natural to some muscles. Sphincter muscles are the most remarkable instances of this, being always above three parts contracted. The face, also, is a part where the action of the muscles on one side influences the position of the parts on the other side; here the muscles bring and keep the skin in one position, till altered by an increased action in some other muscles; and when this increased action ceases, the constant and natural contraction of the whole (similar to that of a sphincter) immediately take place.

That the arteries are muscular is proved from various circumstances. If a portion of an artery be cut out, and stretched as far as it will readily yield in its diameter, and then suffered to contract by its elasticity only, the diameter will be found much larger than before distension was applied.

If an artery is cut through or laid bare, it will be found that it contracts by degrees till the whole cavity is closed. The posterior tibial artery of a dog being laid bare, and its size attended to, it was observed to be so much contracted in a short time as almost to prevent the blood

blood from passing through it, and when divided, the blood only oozed out from the orifice.

When the various uses of the arteries are considered, such as their forming different parts of the body out of the blood, their performing the different secretions, their allowing at one time the blood to pass readily into the smaller branches, as in blushing, and at another preventing it altogether, as in paleness from fear; and if to these we add the power of producing a diseased increase of any or every part of the body, we cannot but conclude that they are possessed of muscular powers.

The arteries upon the whole, may be said to possess considerable living powers, and to retain them for a long time. This is evident, when we observe what must happen in transplanting a living part of one body to unite with another body and become a part of it; the part transplanted must retain life till it can unite so as to receive its nourishment from that into which it has been inserted. To determine how long the living power existed in an artery after its separation from the body, Mr. Hunter made some experiments on the arteries of the umbilical chord, from which it appears, that those vessels have the power of contraction above two days after separation from the body.

It appears that the larger arteries possess comparatively little muscular power, but much elastic, and as they recede from the heart towards the extremities, the muscular power is gradually increased, and the elastic diminished.

There appears to be no muscular power capable of contracting an artery in its length, the whole of that contraction being produced by the elasticity. For in a transverse section of an artery, made when the muscles of the vessel are in a contracted state, it may always be observed, that the external or elastic coat, immediately contracts longitudinally and leaves the internal or muscular projecting; which would not be the case if there was a longitudinal muscular contraction, equal to the elastic; and were not the quantity of muscular contraction greater than the elastic, there would be no need for muscles.

That the heart is not necessary to the circulation of the blood, which can be carried on by arteries alone, is apparent from hence, that many animals exist without a heart; and in fish we find no heart for the motion of the blood in the great circulation, or that over the whole body, having only a heart for the lungs or branchea, while the snail has only a heart for the great circulation and none for the lungs; the circulation of the

the liver in the most perfect animals is also a proof of this.

After having treated fully of the structure and functions of the vascular system, the author proceeds to the second part of the work ; and first
OF UNION BY THE FIRST INTENTION.

All alterations in the natural dispositions of a body, are the result either of injury or disease. Injury is commonly simple ; disease more complicated. The dispositions arising from these are of three kinds : first, the disposition of restoration in consequence of immediate mischief ; second, the disposition arising from necessity ; as that which produces the action of thickening parts, of ulceration, &c. the third is the disposition in consequence of disease.

As disease is a wrong action of the living part, the restoration to health must first consist in stopping the diseased dispositions and actions, and then in a retrograde motion towards health.

An alteration in structure requires a new mode of action for its restoration ; as the act of restoration cannot be the same with what was natural to the parts before any alteration had taken place.

There

There is a circumstance attending accidental injury which does not belong to disease, viz. that the injury done, has in all cases a tendency to produce both the disposition and the means of cure. The operations of restoration are produced, Mr. Hunter supposes, by the stimulus of imperfection; that is, a consciousness of imperfection arises, which produces the action: however we may admit, with the author, the fact, this loose language will surely never be deemed an explanation of it.

The effects of accident which arise from the nature of the parts hurt, may be divided into such as take place in sound parts, and such as affect parts already diseased. The first is what is at present here treated of.

The injuries done to sound parts are divided into two sorts; first, those in which the injured parts do not communicate externally, as concussions of the whole body, or of particular parts, strains, bruises, and simple fractures, either of bone or of tendon, which form a large division. The second consists of those which have an external communication, comprehending wounds of all kinds, and compound fractures.

The injuries of the first division seldom inflame: while those of the second commonly

both inflame and suppurate. The same operations, however, very often take place in both, though the order in which they happen is reversed; the first becoming like the second by inflaming and suppurating; and the second being in many cases, when properly treated, brought back to a resemblance of the first, and united by the first intention; by which inflammation and suppuration are prevented.

The most simple kind of injury is a degree of concussion of parts, producing a debility of the actions and functions. In such a state the parts have little to do, but to expand, and reinstate themselves in their natural position, actions, and feelings; and this is what happens in concussion of the brain.

The rupture of a small blood vessel, is, perhaps, the next in order of simplicity, extravasation taking place, as in bruises, &c. The operation of restoration in this case consists first in the coagulation of the extravasated blood between the ruptured parts, laying as it were the foundation of union; next, in closing the ruptured vessel, or in promoting its inosculation; and sometime after, in bringing about an absorption of the superfluous extravasated blood.

When considerable ecchymosis takes place, and the tumor inflames, it should be suffered to proceed on to suppuration, without opening, in which way, the author says, injuries of this kind do better, than when opened by art.

The union by the first intention usually takes place so soon after the injury, that it may be said to be almost immediate; for when the blood has coagulated in such a situation as to adhere to both surfaces, and so as to keep them together, it may be said that the union is begun. In a slight wound, and where the parts can all be brought into immediate contact, the union is generally completed in 24 hours.

In cases of accidental injury, whatever their magnitude or situation, if the salutary processes, above described, go on readily, no other effect, as irritation, or pain, in consequence of nature's operations is felt. No universal sympathy or fever takes place, except what arises from the mere injury done, but all is quiet as if nothing had happened. This is sometimes the case even in a simple fracture of the bones of the leg, in fissures of the skull, &c. However, the magnitude of the accident often produces effects which are alarming, and more particularly when they happen to parts essential to life. Thus concussion and extravasation affecting the brain,

must likewise affect the constitution, from its natural action, and influence being diminished, increased, or otherwise disturbed.

O F INJURIES WHEN THE WOUND COMMUNICATES EXTERNALLY.—The second division of injury arising from accident, is where the ruptured parts communicate externally; and these may be either simple incised wounds, or contusions producing death in the parts injured: the former are such as may admit of union by the first intention.

Wounds admit of three modes of treatment, arising from their size, situation, and the nature of the parts wounded. One mode is artificial, and two are natural, in which last the constitution is left to perform the cure in its own way. The first mode is by immediate union, as mentioned above. When this kind of union does not take place in a part, a secondary operation for this purpose is produced, viz. Inflammation. If the divided parts are allowed to remain till the mouths of the vessels be entirely shut, inflammation will inevitably follow, and will furnish the same materials for the union which are contained in extravasated blood, by throwing out coagulating lymph; so that union may still take place, though some time later after the division of the parts. This inflammation Mr. Hunter calls the adhæsive,

The inflammation often runs so high, even where the parts have been brought into contact, as to destroy, by its violence, that union which the extravasated juices were intended to perform, the consequence of which are suppuration and granulation, which make the third mode of union.

Mr. Hunter then gives some practical directions respecting union by the first intention, which we shall pass over, as not differing materially from those of other writers.

Of Scabbing.—Under this head we meet with some very good practical observations. Many wounds ought to be allowed to scab, in which this process is now prevented; and this arises, Mr. Hunter supposes, from the conceit of surgeons, who think themselves possessed of powers superior to nature, and therefore have introduced the practice of making sores of all wounds.

Superficial hurts are very common on parts opposite and near to some bone, as on the head, shin bone, fingers, &c. In all such cases it is better to let them scab, if they seem inclined, or will admit of it; and if that should not succeed, they can but suppurate at last. Some compound fractures, more especially where the external wound

wound is very small should be allowed to heal in the same way ; for by permitting the blood to scab upon the wound, either by itself or when soaked into lint, the parts underneath will unite, the blood under the scab will become vascular ; and the union will be complete, even where the parts are not in contact.

This practice is the very best for burns or scalds, after the inflammation has either been considerably prevented or subdued, by proper applications or by time, and may be promoted by strewing the part with some inoffensive powder, such as lapis calaminaris or chalk.

We are next presented with an account of INFLAMMATION and its effects. 1. *Of the different causes which increase and diminish the susceptibility for Inflammation, either in the whole body or in parts.*

Susceptibility for inflammation may be said to have two causes, the one original, the other acquired. Of the acquired it is probable that climate and modes of life, may tend considerably either to increase or diminish the susceptibility for inflammation.

As the body acquires susceptibility for inflammation, as well as for other diseases, it might be made

made less susceptible by the immediate causes coming slowly upon it, or by avoiding those causes and even acting in diametrical opposition to them. Thus the susceptibilities proceeding from habit, may be lessened by a cessation of those habits.

Inflammation will differ considerably, as it is accompanied with strength or weakness. When the constitution is strong, then it will be commonly most manageable, for strength lessens irritability. Inflammation will always be most manageable when the power and action are pretty well proportioned; but as every part of the body has not equal strength, these proportions cannot be the same in every part. According to this idea, muscles, cellular membrane, and skin, and more so as they are nearer to the source of circulation, will be most manageable in inflammation and its consequences, because they are stronger in their powers of action than the other parts of the body. The other parts, as bone, tendon, ligament, &c. have less power within themselves, and are therefore less in the power of art; they also appear to affect the constitution more readily than the former; and the effects, if bad on the constitution, reflect a backwardness on the little powers they have.

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The inflammation, if in vital parts, will be still less manageable, for although the parts themselves may have pretty strong power, yet the constitution, and the natural operations of universal health, become so much affected, that no salutary effect can so readily take place.

Every action that is not acute, especially a mild continuation of some of the symptoms of a former violent disease, is called weakness, but with no propriety. Thus a gleet is called a weakness, iluor albus is called a weakness, and also diarrhæa; none of which the author conceives to arise simply from weakness; for he believes that weakness seldom or never becomes an immediate cause of disease, or action of any kind: but it often becomes the predisposing cause of disease, as agues, scrophula, nervous affections, &c. none of which are simple weakness.

Inflammation is divided by the author into three kinds, the adhæsive, the suppurative, and ulcerative. Some parts of the body admit readily of one only, others of two, and others of all the three. The cellular membrane appears to be more susceptible of the adhæsive inflammation, and very readily passes into the suppurative.

The deeper seated parts of the body, and more especially the vital, very readily admit the adhæsive inflammation, which is proved by dissections; but they do not so readily pass into the suppurative.

Inflammation, wherever situated, is always more violent on that side of the point of the inflammation next to the external surface. This appears to be a general law of nature, and it probably is upon the same principle by which vegetables always approach the surface of the earth.

Although the adhæsive inflammation in general precedes the suppurative, in some parts this order is inverted. In internal canals, where adhæsions in general would prove hurtful, the parts run immediately into the suppurative inflammation; such are the internal surfaces of the eyelids, nose, mouth, trachea, air-cells of the lungs, œsophagus, stomach, intestines, pelvis of the kidneys, ureters, bladder, urethra, uterus, vagina, and indeed all the ducts and outlets of the organs of secretion, which all these parts may be in some degree reckoned, and which are commonly called mucous membranes. In such parts, if the inflammation be but slight, the suppurative commonly takes place, and that almost immediately. But if the inflammation becomes

more violent, then the adhæsive kind takes place, the coagulating lymph being thrown out.

The sympathies that take place in inflammation are the continued, and the universal. By continued sympathy, the inflammation spreads beyond the irritating point. This becomes more an object of surgery, than any of the sympathies, because it increases the local complaint, and it takes its peculiarities from the constitution at large, as well as from the nature of the parts inflamed; as much can be learned from it in inflammation as from any other symptom.

Contiguity of parts does not communicate inflammation. Thus when an intestine is inflamed the inflammation is not communicated to the peritonæum lining the abdomen although in contact; but it produces somewhat of a soreness, even to the external touch. But if continuity take place by adhæsions, then inflammation will be continued from one into the other.

Inflammation too is bounded by simple contact of parts. For instance, a woman had the cœsarean operation performed on her, where a wound of eight inches long was made into the cavity of the abdomen to extract the child. The wound could not be brought afterwards exactly.

exactly together; therefore, so far gave rise to a peritonæal inflammation: but the belly collapsing, and falling on its contents, they all came in contact as before, and the woman living 26 hours, gave time for the inflammatory irritation to take place. After death it was found, that the intestines were united to the peritonæum all round the wound, for half an inch in breadth, and the surface of the intestines which lay unattached and exposed at the bottom of the wound were inflamed, while every other viscus, as well as the peritonæum, beyond the adhesions, were free from inflammation.

The adhæsive, as also the suppurative inflammation may have a principle superadded, which does not in the least alter the inflammatory mode of action, which still continues to go on. This principle is some specific disposition, from scrophula, or poisons, as the venereal, small-pox, &c.

Inflammation appears capable of arising from three causes. First, from some accidental force applied to a part, making a wound or bruise which cannot recover itself unless by inflammation. Secondly, from some irritation which does not destroy the texture of parts, but simply the natural actions, such as pressure, friction, heat, cold, blisters, and other acrid applications,

and often fevers of every kind. Thirdly, from a particular disposition in parts themselves, as boils arising spontaneously without the constitution having been preconcerned.

Irritations which are capable of producing inflammations may be either simple, as the adhæsive, or producing with it other modes of action, as either suppuration or ulceration; and also either of the above modes of action may be joined with some of the specific actions.

" Hence we may conclude, that irritation of whatever kind either produces an inflammation peculiar to the constitution, or the nature of the parts; or, according to the irritating cause, as in the plague; and where it is according to the constitution, that many specific irritations may be added, without altering the nature of the inflammation itself, and that they only determine its situation, extent, duration, &c. according to the specific disposition added, provided the constitution be healthy; but if the constitution be unhealthy, whether affected with erysipelas, putrid fever, or plague, and the specific disease is superadded, it will be a mixture of both, that is, it will be a specific inflammation, set down upon a constitution of a peculiar kind, which partakes of both, and those specific properties

will

will not be so distinct, or so well formed, as when they appear in a sound constitution."

" The knowledge of these facts, is of great service in the cure of many specific diseases; for whatever the specific disease may be, we are always to treat the patient in one respect according to the general nature of the inflammation; and if we have a specific remedy, we are also to join that with the other; but if we have not a specific remedy, we are then only to take up the disease according to the constitution."

" The first case is explained by the venereal disease in the form of a chancre; the venereal matter produces an inflammation and ulceration according to the nature of the specific disease, and the constitution; if the constitution is perfectly healthy, then the effects are the suppurative and specific disease joined; the limits of both are confined according to the constitution and the nature of the specific disease. For the inflammation and ulceration never extend beyond the specific affections; but if the constitution is such as readily to fall into the crysipelatous, then it becomes the erysipelatous and specific joined; and although the extent of the specific affection is limited, that of the erysipelatous is not, the consequence of which is, that it spreads over the whole prepuce, and often the whole skin of the penis."

" In

" In this disease, under such circumstances, we are led to the method of cure ; for although we have a medicine for the venereal inflammation, yet bark is to be given for the erysipelatous, the quantity to be given is according to the predominancy of the one or the other. The effects of this practice are very striking ; for as the erysipelatous inflammation lessens it becomes more confined in its limits, and, as it were, drawn into the original point ; and when it becomes truly suppurative, and venereal, its limits then are brought within the specific distance."

" The second case is explained by the small-pox. The variolous matter in healthy constitutions produces the suppurative and specific inflammations, the specific is limited, and directs the suppurative ; but if the erysipelatous comes on, the suppurative ceases, it then spreads along the surface, uniting inflammation with inflammation, and producing the confluent small-pox."

" We have no specific remedy for the small-pox, nor can we readily have any for a disease which cures itself ; our business then is to cure the erysipelatous, if possible, and leave the constitution to cure the specific."

Mr. Hunter comprehends the different kinds of inflammation under five divisions ; although

he

he acknowledges, that if we take in the specific diseases which produce inflammation, such as the venereal disease in its different forms, the gout, &c. they may be without number. The first, the adhæsive inflammation, which, with its consequences, suppuration, and ulceration are treated of at length. 2. The œdematous. 3. The erysipelatous. 4. That kind of inflammation which produces the carbuncle, and that which leads immediately to mortification. 5. Lastly, an inflammation very like chilblains, which is not very lively, and is often in blotches, some of the breadth of a shilling, others of the breadth of half-a-crown, or broader. This inflammation certainly arises from irritable debility: the blotches look rather of a copper colour, and the skin over them is often diseased.

The œdematous inflammation is where the extravasated fluid is water. It resembles the adhæsive, but is much more diffused. The difference arises, in the author's opinion, from the principle of inflammation acting upon a dropsical disposition, which is always attended with weakness. The inflammation is much more lasting than the adhæsive, and seldom produces suppuration: but if it should run into this stage, it is more general, and the whole cellular membrane in the interstices of parts is apt to mortify and slough,

flough, producing very extensive abscesses, which are not circumscribed.

The extravasation in consequence of the erysipelatous inflammation is not so great, as in either the adhæsive or the œdematosus; nor is it of that kind which produces adhæsions between the parts inflamed. It appears to support itself by continued sympathy; for it commonly begins at a point and spreads, while it shall be getting well where it first began.

The inflammation that produces the carbuncle is of a different nature from any of the former; it is stationary with respect to place, and is pretty much circumscribed. It begins in the skin, almost like a pimple, and goes deeper and deeper, spreading with a broad base under the skin in the cellular membrane which becomes dead. A diffused ulceration on the inside for the exit of the matter takes place, making a number of openings in the skin. There are generally more carbuncles than one at the same time; are more in the trunk of the body than the extremities; and more frequently on the posterior part of the body, than the anterior. This inflammation attacks more beyond the middle age than at it, and very few under it; and is most common in those that have lived well.

Inflammation often produces mortification or death in the part inflamed. This commonly takes place in old people that are become very much debilitated, and chiefly in the lower extremities. When this inflammation takes place, there is often an early separation of the cuticle which forms a blister, filled with a bloody serum; and we shall observe dark brownish spots, which consist of extravasated blood in the true cutis, and which shall at last blister, and then form a slough.

Having given this general account of the four kinds of inflammation above noticed, the author proceeds to treat particularly of the adhæsive inflammation, with its consequences, the suppurative, and ulcerative, which we must reserve for a future number.

(*To be continued.*)

XLVI.

Memoirs of the Medical Society of London. Vol. 4.
8vo. pages 450. Price 7s. boards. London,
1795. Dilly.

THE volume before us contains twenty-eight papers on various subjects, together with an appendix. Of these we shall give an enumeration in order; noticing particularly those which appear of most importance.

Art. 1. *History of a Case of Pemphigus;* by W. Gaitkell.—The affection of the skin in this case was unattended with fever or any other constitutional affection. Dr. Cullen in his nosology having described this disease as accompanied with fever, the author supposes that it is of two species, the acute, and chronic; the former attended with fever; the latter without; that in neither case is it an acrimonious, or contagious matter, thrown off from the blood; but pure serum, secreted by the cutaneous exhalant arteries; and if acrimony exists, it must be attributed to the action of the vessels it passes through.

Art.

Art. 2. *Observations on the Digitalis Purpurea, or Foxglove;* by Dr. Currie of Chester.—The writer is an enemy to this active medicine. The digitalis, he says, is evidently to be ranked amongst the sedative poisons. It acts most powerfully upon the nervous system, destroying its mobility, and weakening the vital powers. In hydropic affections, therefore, which frequently originate from debility, and, almost in every instance, are attended by a considerable degree of it, no good is to be expected from a remedy that operates so strongly in weakening the powers of life. No reasoning, however, can overturn facts. Nothing is more clearly ascertained, than the power of the foxglove in increasing the discharge of the kidneys; and that the increased evacuation produced by it, has, in a very great number of instances, succeeded in effecting a lasting cure of dropsical affections, admits of as little doubt.

The sedative and debilitating effects of the digitalis point it out, Dr. Currie thinks, as an useful and powerful remedy in cases where great excitement, irritability, and increased tone prevail in the nervous and arterial systems. He has employed it in several cases of mania with success, and in two cases of hæmorrhage.

Art. 3, *An experienced and successful method of treating the Fistula in Ano*; by Dr. Mudge of Plymouth.—Considering this as a very ingenious paper, we shall transcribe it at length.

“ Being, in the early part of my life, (says the author.) particularly fond of, and from a mechanic turn attached to the operative part of surgery, I was, therefore, solicitous to remove every embarrassment that might impede the dexterity of an operation, and among others, the difficulty attending the management of fistulæ in ano, or the laying open, in a masterly manner, and consequently the cure of sinuous ulcers burrowing in the fat surrounding the rectum, engaged my particular attention.”

“ To the experienced surgeon, I need not observe, that the want of success, independent of any critical indisposition in the habit, arises from the difficulty of coming fairly at the work, and consequently, of operating or laying open the sinus, and of applying the dressings effectually. Both these important considerations, a very simple contrivance subjected to my management; and as a long and successful experience hath confirmed me in its great utility, I have persuaded myself into the belief of its being a sort of duty, as I have for some time totally relinquished the practice of surgery, to put the world

world in possession of the subsequent mode of treating the fistula in ano."

" Formerly, when a sinus running upon, or in the neighbourhood of the rectum was to be laid open, the generality of surgeons contented themselves with doing it at random, with the probe scissars; an imperfect, and therefore, frequently an unsuccessful mode of operating."

" Cutting also, on the common directions, in a part so confined, and the necessary subsequent dressings to a wound so difficult of access, were attended with uncertainties and embarrassments, which entitled the operator to little better hopes of success."

" Mr. Pott, indeed, with his usual skill and sagacity, simplified, and greatly improved the old mode of operating; and the success frequently attending his method, is a proof of its superior merit; however, I think even his mode of operation capable of great improvement."

" When, therefore, sinuses, which run into, or burrow on, the fat surrounding the rectum, are to be laid open, and afterwards treated with proper dressings, I have many years, and with uninterrupted success, adopted the following method :"

" First,

" First then, in order to see clearly and distinctly the parts to be operated upon, I have found some sort of specula absolutely necessary; but those I have employed, are of a very simple construction; they are not unlike the gorget used for cutting for the stone; except that they are not so taper, and without the beak. The first and largest, is subservient to the knife; the other and smaller, is for facilitating the application of the subsequent dressings. In order, therefore, to lay open a sinus, in its whole extent and direction, the patient ought, in order to empty the rectum, the evening preceding the operation, to take a dose of rhubarb, then being placed in a proper situation, which will be found that of kneeling upon, not against the side of a bed; his body should be inclined forward and downward, sufficiently so to spread the buttocks. If the sinus is on the left side of the intestine, the fore finger of the left hand being first oiled, is to be introduced its whole length into the anus and rectum; and the concave part of the large speculum oiled also, being placed upon it, is under that direction to be gently introduced almost its whole length, but so, that by pressing the end of it against the finger, the rectum may not be injured by any corrugation of the intestine, between the instrument and finger. The speculum being in the rectum, and the finger withdrawn, gives a fair view of the gut, provided the patient is.

is placed advantageously for the light, to an extent of nearly four inches. A director is then to be introduced into the sinus, the end of which, if it perforates the intestine, will be seen; or if it does not, will be felt, and the cavity must be laid open its whole extent, with a straight edged knife. This being done, a doffil of dry lint should be applied with a probe between the lips of the wound, the whole extent of the incision, and the speculum withdrawn, which will leave the dressing, provided the probe is kept upon it till then, in its proper place, with the lips of the wound closed upon it. On the succeeding dressing of the next day, the finger is again to be introduced, accompanied with the speculum, still bearing on the opposite side of the rectum; when, if the patient has not had an intermediate stool, the dressing will be found in its place, and the wound seen in its whole extent."

"The consideration now, is the giving a good surface, by the removal of callosities; this purpose is effectually answered by dipping a hair pencil in butter of antimony, and lightly touching, or smearing expeditiously the whole wound and its edges therewith, which, by the assistance of the speculum, will be done at the expence of a momentary pain, and with the utmost convenience and precision. Dry lint is then again to be placed

placed into, and between the edges of the incision, and the speculum withdrawn as before."

" After the next dressing or two, a slough will be thrown off, about the thickness of sham-moy leather; when the surface of the wound will be found rather unfavourably smooth; but in a day or two after, by the use of the precipitate medicine the whole will have a proper granulating surface, and the wound usually heals rapidly, without any intervening impediment. I need not observe that, excepting the incision, and the application of the caustic, both of which are momentary matters only, the whole is attended with so little pain, that the dressing speculum, after introduction, is generally held by the patient himself. I usually carry the specula in my side pocket, that the patient may not feel them disagreeably cold; and it may be necessary to observe, that they should always be oiled before their introduction."

" An horizontal position of the trunk, during the cure will be found to expedite it."

" I shall not enlarge upon the superior advantages of the above mode of treating the fistula in ano; I think they will be apparent to every operator, whatever they are, however, like most others

other inventors, I do not choose to be deprived of the credit of the improvement, and have therefore, a satisfaction in giving it notoriety by this manner of asserting my claims."

Art. 4. An Account of the Medicinal Effects of the Resin of the Acaroides Resinifern, or yellow Resin from Botany Bay: by C. Kite, Surgeon, Gravesend.—This paper contains a tolerably full account of the production, chemical, and medicinal properties of this newly imported substance. The plant that produces it is low and small, with long grassy leaves; but the fructification of it shoots out in a singular manner from the center of the leaves, on a single straight stem, to the height of twelve or fourteen feet. Of this stem, which is strong and light, the natives usually make their spears. The gum is found under the long grassy leaves in considerable abundance; it commonly exudes in round tears or drops, from the size of a large pea, to that of a marble, and sometimes much larger.

This gum, or rather resin, for it is hardly at all soluble in water, dissolves entirely in alkohol, leaving only the impurities. The spirit takes up so much as makes the solution of the consistence of treacle. The largest quantity it will dissolve appears to be about two ounces to one ounce of spirit.

The cases in which this substance has been administered with success, of which many are here related, are chiefly affections of the stomach and bowels, arising from debility of those organs, such as loss of appetite, sickness, vomiting, flatulency, heartburn, pains of the stomach, &c. also some chronic catarrhs. The way in which it is best exhibited is by making a tincture of equal parts of the gum and rectified spirits; one dram of this tincture, containing half a dram of the pure gum, made into a draught with water and syrup, by the assistance of fifteen grains of gum arabic in mucilage, forms an elegant medicine, and at the same time so palatable as not to be objected to by the patient.

Art. 5. Case of Sphacelated Omentum, with Observations. By W. White, Surgeon, at Morpeth.

The symptoms in this case were so mild and equivocal, that inflammation was not suspected. The patient complained of uneasiness about the region of the navel, but of no acute pain. The pulse was quick and weak; the tongue white, but moist, and he had no thirst. The urine was small in quantity, and there was a remarkable coldness of the extremities. Frequent nausea and vomiting also took place; and a considerable degree of delirium usually came on towards evening.

On

On dissection, the omentum and peritonæum were found completely sphacelated.

Art. 6. *Observations and Experiments on the external Absorption of Emetic Tartar and Arsenic.*
By W. Gaitskell.

In contradiction to what had been held out by Messrs. Blizzard, and Sherwen, respecting the effects of Emetic Tartar and Arsenic on the constitution, when applied externally, several experiments are here adduced, which shew their total inefficacy when used in this way. So large a quantity as two drachms of Emetic Tartar which required for its solution, assisted with heat, seven ounces of distilled water, was rubbed, warm, into the legs, thighs, arms, and abdomen, till the whole was disposed of. No other effect however was produced, than an eruption of pustules on the parts to which it was applied. Arsenic in solution was employed in like manner, and equally without effect.

Art. 7. *Remarks upon peculiarities in the Human System, apparently arising from disease before birth.*
By Mr. James Lucas, Surgeon at Leeds.

Mr. Lucas, supposes that many of the deformities which are observed in infants at their birth, may have been the effect of disease,

during their state of uterine existence. The foetus before birth, he observes, is certainly no less capable of being affected by inflammation than the infant after it. When inflammation takes place, inflammatory exudation will frequently be the consequence. From hence, adhesions may often arise of force sufficient considerably to obstruct the growth, and occasion other very material alterations in the shape of the parts so affected; producing various deformities, and essentially injuring the functions of whatever organs may chance to have been exposed to its action and influence.

The division in the hare-lip; the imperforate state of passages naturally open; the union of parts usually unconnected may seem to have arisen from prior inflammatory affections; as also the descent of the testicle to have been prevented by the operation of the same cause.

Art. 8. A Chemosis, or Tumour of the Tunica Conjunctiva, cured by Excision. By W. Bird, Surgeon of Chelmsford.

The title of this paper sufficiently expresses its contents.

Art. 9. Histories of three cases of Typhus, successfully treated. By W. Harrison, M.D. of Rippon.

The

The peculiarity of treatment in these cases, and which the author strongly recommends, consists in washing the whole body of the patient daily with a mixture of equal parts of vinegar, and the coldest spring water that could be procured.

Art. 10. An Account of some Anomalous Appearances consequent to the Inoculation of the Small-Pox.
By Charles Kite, Surgeon of Gravesend.

In two cases of inoculation at the same time, and under the same circumstances, the arms inflamed in the usual way, and both patients sickened at the usual time. The incision suppurated, but there was no eruption that was clearly variolous. The patients were both inoculated again, fourteen days after the first inoculation. One of them took the disease and went through it mildly; the other remained unaffected.

Three children of Mr. Colyer of Dundale, were inoculated on the 10th of February, 1790, with matter from a woman, on the fifteenth day of the natural small-pox, and who was extremely full of the distinct sort. The incisions on the arms inflamed properly, and on the seventh or eighth day they began to have the common febrile symptoms in a moderate degree. The eldest

eldest and the youngest had a few eruptions, and the other a considerable number, which had every appearance of true variolous pustules. Unfortunately no other person was inoculated from these. About a month afterwards all these children took the disease in the natural way, and had an eruption in a considerable degree.

About the latter end of September they all caught the chicken pox; after a slight fever of two days, watery eruptions made their appearance; these continued two or three days, then scabbed over, and soon became well.

In these cases it appears certain, first, that the matter with which the children were inoculated was variolous; secondly, that the incisions inflamed in the usual way, and at the usual time; and thirdly, that febrile symptoms came on at the usual time, and were followed by an eruption of pustules, whether variolous or not cannot be proved. That it was not the chicken-pox appears from that disease taking place at a subsequent period. Lastly, it is certain that these children afterwards were seized with the small-pox in the natural way.

Several other instances are related, where the incisions inflamed, and had matter formed in them; where a fever came on at the common period

period which was followed by some eruption, and yet the natural small-pox followed. The author endeavours to explain this by supposing; that the first arises from a *certain degree* of variolous infection, but which infection was not sufficiently powerful to propagate the disease fully and completely.

Art. 11. An Instance of a fatal Pulmonary Consumption, without any evident Hectic Fever.
By Anthony Fothergill, M. D. of Bath.

Art. 12. History of a Cure of Croup terminating fatally, with a Dissection and incidental remarks.
By Henry Field, Apothecary.

On dissection a slight inflammation was found on the internal surface of the trachea extending into the bronchea; the epiglottis and glottis were completely covered with a thick white opaque membranous crust, adhering firmly to those parts so as to be separated with difficulty by a probe, and extending about an inch downwards in the trachea. The disease was treated by antiphlogistic remedies, and, it is unnecessary to add, without success.

Art. 13. An Account of a singular Case of Ischuria; by Isaac Senter, M. D. of Philadelphia.

We

We have already given an account of this very singular case in our first number*.

Art. 14. *History of a second, or supposed second Small-pox*: by Edward Withers, Surgeon, Newbury.

The subject of this case was Mr. Richard Langford, a farmer of West Shefford, in Berkshire, about fifty years of age, who when about a month old, had the small-pox, at a time when three others of the family underwent the same disease, one of whom died with it. Mr. Langford's countenance was strongly indicative of the malignity of the distemper, his face being remarkably pitted and seamed, so as to attract the notice of all who saw him, so that no one could entertain a doubt of his having had the disease in the most inveterate manner; moreover it was usual for him also, whenever the small-pox happened among the poor of his parish to attend and assist in accommodating them with all necessaries.

In the year 1775 this man had the disease naturally, of the confluent kind, and of which he died. He was seen by two physicians, besides the author, all of whom were clear in its being the small-pox; besides that the disease spread through the family.

Art.

* Vide Med. and Chir. Review, for July 1794, page 49.

Art. 15. *Some Account of Angustura Bark.* By J. C. Lettsom, M. D.—Some cases are here given, which confirm the accounts of Mr. Brande and Mr. Wilkinson, relative to the tonic and febrifuge power of this bark.

Art. 16. *An Anatomical Description of a double Uterus.* By Thomas Pole, Surgeon.—This is an instance of a complete double uterus and vagina, a plate of which accompanies the description.

(*To be continued.*)

XLVII.

A Supplement to Medical Botany. By William Woodville, M. D. F. L. S. Physician to the Small-Pox and Inoculation Hospitals. 4to. Pages 169, Price 1l. 13s. 6d. coloured, 14s. plain. Phillips, London, 1794.

THE former part of this elegant and useful work, having been published long prior to the commencement of our Journal, is not therefore an object of our notice. We shall merely observe, that it was comprised in three volumes 4to. and consisted of plates, with Botanical descrip-

descriptions of most of the principal medicinal Plants contained in the pharmacopœias of the London and Edinburgh Colleges, accompanied with a circumstantial account of their medicinal effects, and of the diseases in which they have been respectively employed. The price of the work, including the supplement, is 2l. 19s. plain, and 6l. 1s. 6d. coloured.

The present volume contains an account of most of the principal medicinal plants, not included in the Collegiate Pharmacopœias, to which therefore it may be considered as an appendix.

The following account of the Caoutchouc, Resina Elastica, or Elastic Gum, a substance, the nature of which is not very generally known, we hope will be acceptable to our Readers.

" Though it appears that neither water nor alcohol, aided by all the heat capable of being produced in Papin's digester, could dissolve this substance, yet its solution was effected not only by the concentrated mineral acids, but, in a considerable degree, even by most of the unctuous, distilled, and empyreumatic oils. However, as it was found that the solution of this inspissated juice by these menstrua irrecoverably lost their elasticity, and became useless, the great desideratum of re-forming the Caoutchouc was

was not attained till ether was employed as its solvent; which was first done by Macquér, who for this purpose found it necessary to use the vitriolic ether in a highly rectified state."

"The Caoutchouc, cut into small pieces, and put into a proper vessel with as much of the ether as was sufficient to cover it was completely dissolved without the application of heat. This solution, which was transparent, and of an amber colour, on being thrown into water, did not produce a milky liquor; but there arose to the surface a solid membrane, possessing the elasticity and other properties of the Caoutchouc. This experiment was also executed with success by Theden; therefore those with whom it failed must have used ether in a less concentrated state. According to Theden, one drachm of the Caoutchouc requires for its perfect solution an ounce of ether; nitrous ether dissolves but a small proportion of the Caoutchouc, and at the same time destroys its elastic power."

"It has been asserted that the elastic resin not only dissolves in oil of guaiacum by digestion, but that on evaporating the oil, the resin in a little time recovers its elastic property. By the industry of Achard, who made this discovery, we likewise learn that solutions of this substance, made by the etherial oils, may be decomposed by

the addition of spirit of wine, when the Caoutchouc separates from the oil in the form of mucilage, and on being sufficiently exposed to the air, is restored to its former firmness and elasticity."

" However Juliaans, who attempted this process, was unable to re-produce a substance possessing the characters of the elastic resin, it is therefore to be feared that this method, which seemed to promise an easy and cheap way of forming various instruments of the Caoutchouc, has been prematurely recommended; nor does the method of softening the elastic resin with the animal oil of Dippelius, or with oil of turpentine, as proposed by Herissant, for the purpose of forming it into probes, &c. produce the effect desired. It appears therefore that Macquer's process of dissolving this substance in ether, by which he was enabled to give a coat of Caoutchouc of considerable thickness to a cylindrical mould of wax, is the best way yet discovered of adapting this substance to surgical and other purposes, for on immersing the waxen mould, thus covered with the elastic resin, in boiling water, the wax soon melts and rises to the surface, leaving behind a regular tube of Caoutchouc. In order to render the tubes of sufficient firmness to be used as catheters, it has been recommended that gold or silver wire, rolled in a close

close spiral manner, should be coated with the elastic resin and these, as possessing both pliability and firmness, are said to succeed very well. Various other methods of forming catheters, bougies, pessaries, trusses, &c. of this substance, are to be found in the Journal de Medicine, especially by Durand and Juville; and by its remarkable flexibility and elasticity it accommodates itself to the motion of the body, and thereby possesses peculiar advantages for a syringe, or injecting machine; the common form in which it is brought here is exceedingly well adapted, and only requires that a proper pipe be fixed to the neck of the elastic bottle to render it fit for use, which is well known."

" We are told that in Quito, one of these bottles, fastened to a hollow reed, and filled with water, is always presented at entertainments to each of the guests, who use it as an injection before eating."

" The Indians make boots of the Caoutchouc; also a kind of cloth which they use for the same purpose as we use oil cloth; flambéaux are likewise made of the resin, which yield a beautiful light without any disagreeable smell. In this country it is much used for rubbing out black lead pencil marks."

XLVIII:

An Account of a New and successful Method of treating those Affections which arise from the Poison of Lead. By Henry Clutterbuck, Member of the Corporation of Surgeons, and Surgeon to the Royal Universal Dispensary. 8vo. page 69. price 2s. Boosey, London, 1795.

THE virulent nature and obstinacy of the disorders proceeding from the source above mentioned, must have been evident to the observation of every practitioner: very numerous are those, the author observes, who are employed, in raising the lead from the mines, in manufacturing its several preparations, and in applying them to their respective uses. The greater number of these are attacked with a train of symptoms, tormenting to the sensation, and destructive of all the active powers of the body.

After a description of the effects produced by this poison, the author remarks on the frequent inefficacy of the means in common use for their removal; and the remedy which he recommends, from experience, is mercury. In illustration of the

the effects of mercury as an antidote to the poison of lead, he enters into a comparative view of the symptoms occasioned by the application of each of those substances to the Human Body.

" The effects of lead on the system are exerted for the most part partially. On attentive consideration of the state of the parts immediately affected, it is impossible not to see, that it consists principally, if not totally, in a torpor or want of action of the muscular fibres. All the various symptoms admit of explanation on this principle. No rigidity or contraction is perceived in the paralytic limbs. An indisposition, or inability to contract at the instigation of the will seems to constitute the whole of the affection. On dissection, the affected muscles appear flabby and loose in their texture; of a pale, unhealthy colour; taking on the appearance of muscles which have remained long inactive."

" The affection of the intestines probably arises from some part of the alimentary canal having lost its contractile power; hence the contents are not propelled forwards; this must give rise to flatulency and distention of the superior portion of the intestines; and to these will necessarily succeed, spasmodic contraction, and pain, of the parts not immediately affected by the lead."

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"That the affection is not simply spasmodic contraction of the intestines, is probable, from its dissimilarity to what takes place in the *Ileus*, or spasmodic colic. In the latter case the constipation being removed, the complaint in general is instantly removed also ; and it most commonly goes off with a copious evacuation. In the *Colica Pictonum*, the evacuation, when effected, is always sparing ; and the relief obtained is of very short duration. A fresh accumulation of fæces immediately begins to take place, and distention and pain in a short time succeed."

"A diminished secretion of all the fluids naturally poured out into the alimentary canal accompanies this disease. The fæces are of a whitish clay-like colour, and of a hardened consistence ; shewing the deficiency of bile, as well as of the other intestinal fluids."

"The cramps which so frequently occur in patients of this description, serve, in like manner, to point out the debilitated state of the muscles. Thus we observe that muscles which have been fatigued by violent, or long continued action, as in running or dancing, are peculiarly liable to this affection. It is remarkable, however, that the muscles affected with cramps from the poison of lead, are not those which usually become paralytic. The larger muscles of the legs, and those

those about the back and shoulders, are generally affected with cramp; whilst the paralytic state of the muscles of the fore arm, is not, as far as my observation goes, preceded by any spasmodic contractions."

" From the action of mercury, on the other hand, instead of that torpor which marks all the symptoms arising from lead, an increased irritability of every part of the system may be observed, disposing it to violent action. Thus, we may remark increased action of the heart and arteries; a tendency to increased action in the vessels of the skin; of the intestines; of the kidneys; of the salivary glands: in short, every secretion, and excretion of the body is, at times, preternaturally increased."

" The effects of mercury, when long and largely applied, on the larger muscles, is not less striking. Gilders, and others, who suffer from quicksilver, are much affected with tremors and debility, particularly in their hands; and when the disease is confirmed, like patients labouring under the *Chorea Sancti Viti*, they have no command over the muscles, which naturally obey the will."

" It is true, that tremors, and pain in the bowels have been enumerated amongst the symp-

toms arising from the application, both of quicksilver, and of lead, to the system. But, on examination, they will be found to differ *totâ facie*, from each other. In the palsy from lead, tremors are only observed, when the muscles are put into action by the will, as when an attempt is made to lift any heavy body; the want of power in the muscles occasions reiterated efforts to be made, which necessarily produces irregularity in the action. But in those tremors produced by quicksilver, the disposition to action in the muscular fibres is so great, that it takes place, independent of the will, and the shaking is observed, whether an effort be made or not."

" With regard to colic, as arising from quicksilver, this also is totally different from that, which lead produces, and pain is, perhaps, the only symptom which is common to the two. The one is almost universally accompanied with, or soon followed by, dysenteric purging. The characteristic symptom of the other is constipation."

" It may naturally be asked, how it has happened, that a remedy, in such frequent use as mercury, should hitherto have escaped observation, with regard to its good effects in the disease above described? To this it is not easy to give

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an answer. Whether it may ever have been employed by individuals in practice, or not, it is impossible now to determine. Certain it is, that no such instance has been made public. Indeed, it is reasonable to conclude, that a trial of this kind has not been made, since, supposing the good effects to have been so decided, as they were in the cases which have fallen under my observation, it is impossible they should have been overlooked. Something perhaps has been owing to prejudice. The mineral poisons have generally been classed together, and probably they have been conceived to operate in a somewhat similar way. Hence it was not likely that one of them should have been thought of as a remedy for the ill effects produced by another."

"Another reason which may have prevented any trial with this medicine, may have been the loose and unguarded manner, in which several of the writers, who have treated of that species of colic, which is succeeded by a paralytic state of the limbs, have assigned the cause of the disease. Sometimes it has been attributed to the use of acids; sometimes to bismuth or lead; and sometimes even to quicksilver itself. Until this subject was better understood, this was sufficient to deter men from the use of mercury in this affection."

In confirmation of the train of reasoning above recited, several cases are brought forward which clearly prove the utility of the remedy in question. A letter from Dr. Bradley, physician to the Westminster Hospital to the author, is also added, which gives his testimony in favour of the use of mercury.

The latter part of the work contains general observations on the internal administration of lead. The author is of opinion, that although this substance frequently excites symptoms which are sufficiently terrible, yet, that under a cautious management it is capable of becoming a very useful remedy; and especially, he observes, that if it be proved by future experience that mercury is so powerful in removing the ill effects occasioned by lead, we shall have less fears in exhibiting the latter.

It is thrown out as a speculation, and which we think may deserve attention, that supposing quicksilver to be an antidote to the poison of lead, how far may the converse of this be true? may not lead, in its turn, become the means of correcting the ill effects arising from the excessive use of mercury?

We shall not stay to inquire how far the theory employed in this pamphlet be well founded:

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we shall only observe, that it has at least plausibility. The ascertainment of the fact by the experience of other practitioners is a point of infinitely greater importance.

XLIX.

Observations relating to the Extraction and Diffusion of the Cataract; the Cure of the Gutta Serena; and the treatment of the Epiphora, or watery Eye, By James Ware, Surgeon. 8vo. pages 172. Price 3s. Dilly. London, 1795.

THIS pamphlet contains three tracts. The first is an enquiry into the causes which have most commonly prevented success in the operation of extracting the Cataract; with an account of the means by which they may either be avoided or rectified. The want of success in extraction, the author deduces from one or other of the following circumstances:

First, from making the incision through the cornea too small: secondly from wounding the iris with the knife: thirdly, from suffering a portion of the vitreous humour to escape: fourthly,

fourthly, from extracting only a part of the cataract, and leaving the remainder behind in the eye: fifthly, from suffering foreign bodies, after the operation, to press unequally on the ball of the eye: and sixthly, from prematurely exposing the eye to the action of too strong a light.

To avoid the inconveniences arising from the first circumstance, it is of importance to attend to the proper mode of fixing the eye; and to distinguish accurately between the time when pressure may be applied with advantage, and when this pressure becomes injurious. A moderate steady pressure may be continued with the most perfect safety on the inner and inferior side of the Sclerotica until the point of the Cornea knife has passed compleatly through the Cornea, a little above its transverse diameter, and has emerged for a small distance beyond the inner side of this tunic. When this is accomplished, which by some is called the punctuation of the Cornea, the design of pressure is answered; and the continuance of it for a longer time would not only be unnecessary but is also injurious. The knife alone will now be sufficient to prevent any improper motion in the eye. The fingers of the operator therefore must be wholly removed from pressing on the eye, and the instrument afterwards be

be steadily but gently pushed on, cutting its way down, parallel with the plane of the Iris, until its edge come out close to the lower margin of the Cornea, and has divided, as above mentioned, nine-sixteenths of the circumference, of this tunic.

The accident of wounding the Iris with the cornea knife, may arise from inaccuracy in the form of the instrument, or from unsteadiness in the hand of the operator, suffering the aqueous humour to escape before the knife has been so far passed through both sides of the cornea, as for the lower edge of the instrument to be placed below the inferior edge of the pupil. When the edge of the knife is perceived to be enveloped with the Iris, falling forwards, it may generally be reinstated, by applying gentle frictions on the Cornea, over the entangled part, with the point of the finger; in consequence of which this membrane will instantly retract, and resume its natural position.

The escape of a portion of the vitreous humour must in general arise from the undue application of pressure. The author recommends that as soon as the knife has proceeded sufficiently low to secure the Iris from being wounded by the edge of the instrument, the operator, in order more certainly to avoid the counteraction

counteraction of the upper eyelid, (which if considerable might injuriously press on the eye) should not only take heed that his own finger do not touch the eye, but should also direct the assistant, who supports the upper lid, to remove his fingers entirely from this part. Notwithstanding the upper lid be left thus free, a sufficient space will still remain, between it and the lower lid, to give a full view of the progress of the knife; and afterwards, in compleating the incision, the operator should depress the lower lid with great gentleness, and should be particularly careful, when the Cornea is tough, to avoid dragging the eye outward.

Under the head of foreign bodies of any kind after the operation, pressing unequally on the globe of the eye, the author considers—the intervention of the edge of the inferior eyelid between the sides of the divided Cornea;—the inversion of the edge of the inferior eyelid;—and the lodgement of one or more loose eyelashes on the globe of the eye. To all of these accidents it is necessary to pay particular attention.

The author particularly objects to an early exposure of the eye to light, as liable to be followed by inflammation which might destroy every hope of success from the operation. He thinks

thinks it can seldom be proper to examine the eye earlier than the fifth day, at which time the union of the cornea may be expected to be compleat.

The second division of the work treats of the dissipation of the Cataract. Instances of cures, accomplished in this way, have repeatedly occurred to the author, when the disorder has been produced by an external cause; insomuch that he indulges the opinion, that, under such circumstances, the operation will rarely, if ever, be necessary. Three cases are here related where, in consequence of inflammation accidentally brought on, the opacity of the chryalline disappeared; these having already been before the public,* we shall not detail them. Taking advantage of these facts the ingenious author was induced to excite inflammation voluntarily in the hope of succeeding, as in the cases above hinted at.

“ Since the two preceding papers, on the dissipation of the Cataract, were read before the Medical Society, I have had occasion to attend a considerable number of cases in which an opacity of the crystalline humour was produced

* Memoirs of the Medical Society, Vol. 3.

by violence done to the eye ; and in most of these the opacity was dissipated, and the sight restored, during the external application of Æther. Of the cases that proved successful under this mode of treatment, I have a written account of eight ; and a recollection of several others, the particulars of which I have now forgotten, having unfortunately omitted to put them on paper at the time the cases were under my care. It was at first my design to publish on this occasion a full copy of the notes I made on the eight above mentioned ; but I find, in the description of them, so great a similitude, not only to one another, but to the case of Mr. L. above related, that the perusal of them would be of little use, and perhaps irksome, to the reader. Sometimes I have diluted the æther with a third or fourth part of a weak solution of hydrargyrus muriatus ; but in general I have used the æther alone, which has been applied, by means of a camel's hair pencil, to the eye itself. The application of this remedy occasions a very pungent pain in the eye, with considerable redness in the tunica conjunctiva, but those go off in a few minutes, and leave the eye as easy, and the conjunctiva as pale, as they were before the æther was used. By this excitement of inflammation, and by the increased action it occasions in the different parts of the eye, I presume it is that the æther promotes the dissipation

dissipation of the opaque crystalline. In some, the good effects of the application, were quickly perceived; but in others, several weeks have elapsed, before any favourable change was discovered. The progress of amendment has been usually slow; and in general it has been first noticed by the patient himself, in consequence of the increased strength with which the light affects the eye. About the same time a kind of crack in the opaque crystalline is usually perceived on inspection. The number of these cracks gradually increase, until at length the humour assumes an appearance like that of jelly half dissolved. In a few instances the crystalline humour has continued a long time in this semi-dissolved state; but in general the pupil has speedily afterwards become quite clear. Sometimes several opaque spots have remained in the capsule of the crystalline, after the crystalline itself has been wholly dissolved. At other times nearly one half of the pupil has continued covered by a portion of the opaque capsule, whilst the other half has been perfectly transparent."

" It should be recollect^d that all the cases of Catara&t, to which I here refer, as having undergone this favourable change, during the application of æther to the eyes, were produced by external violence. Two of the eight, for instance, of which I have a written account,

were occasioned by a puncture through the Cornea with the pointed end of a fork; a third, by a puncture with a steel drill; a fourth by a slight perforation with a piece of thin wire; a fifth, by a wound made with a splinter from an iron maul; the Cornea of the sixth, was cut through, from one side to the other, with a sharp pointed pen-knife; the Cornea of the seventh was burst by a blow with a cricket ball; and that of the eighth, by a splinter from a rotten stick.— In one of the two cases, in which the Cornea was punctured with a fork, the Iris was wounded, and the figure of the pupil, was changed to an irregularly oval aperture:—in that, in which a wound through the Cornea, was made by the sharp end of a penknife, a scar was formed in this tunic, which extended obliquely from one side to the other; but, notwithstanding this a large portion of the pupil remained open; and ultimately this aperture recovered a considerable degree of transparency both above and below the scar:—in two of the other cases, the capsule of the crystalline remained for a long time partially opaque, after the crystalline humour itself was wholly dissolved:—in the rest, the pupils became quite clear, and preserved their round figure as perfectly as if no accident of any kind had happened.”

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" In a few instances I have mixed an equal quantity of oil of amber with the æther, instead of applying the latter alone. In one of these, the dissipation of the Cataract took place very shortly after the amber was added; but I have not been able, in any of the rest, to ascertain the superior efficacy of this mixture to that of æther alone."

" The success which attended the treatment of the cases above related affords a hint for improving the operation, in those cases where there is ground to believe that the opaque crystalline is either soft, or fluid; and in this state it usually is when the disorder is discovered in infants, either at the time of their birth, or shortly afterwards."

The third tract is on the cure of the Gutta Serena. Four cases are brought forwards, which were cured by the use of Electricity, and four others, by means of a mercurial snuff: most of these also have already appeared. The causes of this affection, the author observes, are various, some of which are, from their nature, incapable of being removed. Thus, in one, blindness has been found to be occasioned by an encysted tumour weighing fourteen drachms, which was situated in the substance of the cerebrum, and pressed on the optic nerves near their origin:—

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in a second, by a cyst, containing a considerable quantity of water, and lodging itself on the optic nerves, at the part where they unite:—in a third, by a caries of the os frontis, occasioning an alteration in the figure of the optic foramina:—and in a fourth, by mal formation of the optic nerves themselves*. But other cases have occurred, in which, upon opening the subject, and after the closest inspection, nothing was to be discovered, either in the structure of the eye, or in the state of any of the component parts contributing to the faculty of vision, which could at all obstruct the performance of their proper office. In these instances the defect of vision is accounted for, by supposing some defect in the optic nerves, disqualifying them for conveying the impressions of objects through the eye to the brain.

The author supposes there may be another cause of this disease, which is a dilatation of the anterior portion of the *circulus arteriosus*. By the term *circulus arteriosus*, anatomists understand an arterial circle, surrounding the *sella turcica*, which is formed by the carotid arteries on each side, by branches passing from them to meet each other before, and by other branches passing

* Boneti Sepulchretum Anatomicum, lib. i. sect. 18.

backward to meet branches from the basilar^y artery behind. The anterior portion of this circle passes over the optic nerves, which therefore may become compressed when any enlargement of these vessels takes place. Mr. Ware thinks that this cause may be often removed by bleeding, blistering, purging, &c. But we may remark, that we have no criterion, by which to distinguish this from the other causes, and that this state of the parts can only be remotely inferred, and that with great uncertainty from a phlethoric habit of body in the patient.

A Dilatation of the artery which passes directly through the center of the optic nerve to the retina may likewise become a cause of defective vision.

That form of the disease which is accompanied with a contracted state of the pupil, and which has been produced probably by an internal ophthalmia, Mr. W. thinks is best relieved by the internal use of the *Hydrargyrus muriatus*, a quarter of a grain for a dose.

In several instances of the common Gutta serena, the author has known considerable relief to be obtained by the use of a snuff composed of ten grains of Turbith Mineral, with about a drachm

drachm of the pulvis sternutatorius; or in place of that, the glycirrhiza or saccharum commune.

The work concludes with some remarks on the Epiphora, in addition to those which the author published some time ago*.

We must not take leave of this ingenious work without acknowledging the satisfaction we have received from its perusal.

* Chirurgical Observations relative to the Epiphora or watery Eye, &c.

L.

*Nouveaux Memoires de l'Academie Imperiale et Royale de Sciences, &c. de Bruxelles. Vol. 1.**

Memoir on the Preservation of Aliments. By the
Abbe Mann.

ALIMENTS are *dry* or *liquid*. The dry are taken from the *animal* or *vegetable* kingdom. It is the preservation of the latter that is the subject of this Memoir. The author begins with a list of vegetable aliments, divided into the heads of *grains*, *fruits*, *leaves*, and *roots*, of which he enumerates above eighty articles. All of these he supposes capable of preservation in a salutary state for a year.

* The interruption that at present subsists with regard to communication with the Continent, makes it exceedingly difficult for us to have recourse to the originals of foreign publications, we are therefore under the necessity of recurring to such aids as we can procure. For the account of the papers here given we are indebted to a late very useful work, entitled *Memoirs of Science and the Arts*, or an abridgement of the Transactions published by the principal learned and economical Societies established in Europe, Asia, and America. Vol. I. part 1, and 2. Pages 543. 4to. Price 1l. 1s. Faulder.

The methods at present in use for this purpose, are,

1. Drying by the open air in the shade. This is chiefly employed for medicinal and pot herbs.
2. Drying in the sun, or by a very moderate fire; as used for raisins, currants, figs, and other dried fruits; and sago.
3. Drying in an oven. Other fruits. Hops.
4. Grilling upon clean and moderately heated iron plates. The Chinese prepare tea leaves in this way.
5. Drying by means of a circulation of dry or warm air. M. du Hamel du Monceau proposed granaries with Hales's ventilators. The Poles and Livonians dry their corn in buildings having a furnace on the ground-floor supplied with air only from beneath, which when heated, passes through the lares of grain on the upper floors, to an opening in the roof.
6. Baking and re-baking in an oven. Biscuit ground and pressed down in iron-hooped casks will keep a number of years.
7. Salting.

7. Salting. This is done either with or without fermenting. The former is the method of preparing sour krout.

8. Marinating with vinegar, salt and pepper. This is practised on some fruits and tender vegetables.

9. Preserving with sugar, the dry and the moist way.

10. Preserving in brandy.

11. Cutting off all communication with the external air, as in covering seeds with wax, &c.

12. Extracting and inspissating the juices of alimentary substances; as in making robs. Portable soup is an animal preparation of this kind.

13. Keeping in dry sand.

The writer proceeds to examine which of these methods is best suited to each kind of vegetable matter.

Drying in ovens moderately heated, is a mode applicable to a great number of vegetables, as potatoes, turneps, carrots, legumes, apples, pears, plumbs, and other fruits. No method preserves better all the qualities of the substance, is more

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easy to practise, or more efficacious. It deserves to be generally recommended. *Drying by the circulation of warm air* is excellent for grains and farinaceous seeds, but inapplicable to other matters. *Salting with fermentation* may be used to all kinds of leaves and roots, and the preparation is a great preservative from the scurvy. It might be made as general as drying in an oven. The other methods belong more particularly to articles mentioned under them. That of inspissating juices of fruits, &c. is a very effectual mode, but costly, and chiefly fitted for sea stores. None of them can justly be accounted insalubrious,

The Abbé then touches on the modes of preserving water sweet; particularly describing an experiment tried in the French navy, of filling a cask with water, adding both hands full of quick lime, letting it stand for five or six days, then pouring out the water and rinsing the cask, and afterwards putting in the water intended for the voyage. By this method water was kept perfectly sweet during a six months voyage to the isles of France and Bourbon. The quick-lime was found to have made a thin coating round the inside of the cask.

Memoir on the infallible sign of Death. By M.
Durondeau.

" After enumerating the various opinions of authors relative to the signs of death, with the objections that have been made to them, the writer recurs to putrefaction as the only certain one. This opinion, which caused a popular outcry against Winslow, from the danger the living would be exposed to, if that sign of death were always to be waited for, M. Durondeau endeavours to render unobjectionable, by distinguishing the two states of incipient and complete putrefaction, and establishing his proofs of death on the former, when no danger can arise to the living. The chymical products of these two states, he alledges, are absolutely different, acidity being that of the first, and alkalescence of the second. In the first, the vapour that emanates is fixed air or ærial acid, joined with a certain cadaverous effluvium, which is sufficiently manifest to the senses. With this there is a glutinosity of the humours, which exhale through the pores, and form a clamminess upon the surface of the body. From these two signs an incipient putrefaction may with perfect certainty be detected, and in consequence the entire abolition of life. It is therefore the point at which the determination should be made, and the body

body interred, without waiting for the second state in which the putridity becomes noxious. He distinguishes the putrid exhalations from living bodies in cases of gangrene and sphacelus, from those of dead, the former being owing to the vital motion and heat, and ceasing after death, so that there is no danger of mistaking the two cases. He does not think it necessary in all cases rigorously to wait for interment till the signs of incipient putrefaction appear, but in those in which no gradation of disease has preceded, as asphyxies in general, hysterics, apoplexies, external injuries, drowning, suffocating, and the like."

LI.

*Observations on the Medicinal use of the Seeds of Cevadilla :** extracted from the V. Vol. of the *Journal de Peterbourg.* (Esprit des Journaux)

ALTHOUGH the acrimony of these seeds be so great as sometimes to have occasioned dangerous symptoms, when applied externally

* Veratrum Sabadilla. Hordeum Causticum. C. B.
Indian Caustic Barley : The seed vessel of a Mexican plant, resembling in its form and structure a barley ear, but with smaller seeds, not above the size of linseed. Lewis.

for

for the destruction of vermin, &c. M. Schmucker, has not hesitated, for some time, to advise them internally as a vermifuge. The method of administering it which he adopts, is to give every morning fasting half a drachm of the seeds in fine powder, mixed with honey, exhibiting on the fifth morning a drastic purgative. M. Schmucker affirms that this remedy does not fail to expel the tænia, and that not one, of several hundreds to whom he has given this remedy, but has received relief.

The author, M. Loeffler, confirms the opinion of M. Schmucker, by his own observation, several instances of which are here adduced. A soldier was attacked with a putrid fever, accompanied with violent epileptic convulsions. Finding his abdomen tumid, M. Loeffler imagined he had worms, and directed the Cevadilla as above mentioned. The patient brought up by vomiting, several worms, and a large quantity of glairy matter; and, by continuing the remedy, soon perfectly recovered.

A woman was confined to her bed, with continued fever, headach, nausea and swelling of the abdomen. Evacuations produced no good effect. By the use of the Cevadilla a great quantity of lumbrici were discharged, which in the space of five days removed the disease.

A soldier

A soldier had been affected for six weeks with epileptic fits, without any known cause. Trial was made of the Cevadilla. A quantity of slime and worms were brought away, and the disorder disappeared.

Another soldier had been for twenty years subject to epilepsy, and complained constantly, about the return of the fits; of violent pains in the belly, and also at times discharged some worms; he took the same remedy. A great quantity of glairy matter was evacuated, from which time he continued free from the epileptic attacks.

A woman suffered frequently pains of the belly, nausea, unnatural appetite, with a considerable flow of saliva from the mouth, and distention of the abdomen. The Cevadilla was administered, and on the fifth day a purgative was given, which brought away a tape worm, five ells in length; after which she continued free from complaint.

A young man ill of a violent catarrhal fever, with cough, delirium, pains in different parts of the abdomen, with frequent convulsions, was cured in like manner by the use of the Cevadilla.

Sometimes this remedy excites considerable heat in the stomach. When this is the case, it may be given advantageously in the form of pills.

T H E

MEDICAL and CHIRURGICAL
R E V I E W.

For MAY 1795.

LII.

Memoirs of the Medical Society of London, vol. 4.
(continued from page 461.)

ART. 17. *Abridgement of Mr. Robert White's Paper on Schirro-contracted Rectum.* The author thinks a mercurial course may be a probable remedy in the early stages of the disease.

Art. 18. *A Case of Petechiæ unaccompanied with Fever.* By T. Garnett, M. D.

Art. 19. *Observations on the external use of Tartarised Antimony.* By Thomas Bradley, M. D. This paper contains an account of the external use of the emetic tartar in rheumatic affections. A scruple or half a drachm of the powder, moistened with water, was rubbed in at bed-time. On the first application it was generally rubbed on the parts affected, and afterwards below them in the course of absorption. In every instance, the author says, it appeared to be a remedy of great efficacy; but the disagreeable symptoms produced by it, viz. the eruptions on the skin, caused many to desert its use altogether, or to apply it unfaithfully. In our opinion, this inconvenience will always prevent the introduction of this method into common use, and, especially, as its effects on the constitution when applied in this way, appear extremely doubtful; for Dr. Bradley himself allows, that he has never seen it unequivocally affect either the stomach, bowels, or kidneys, nor does it ever produce a general dia-phoresis.

Art. 20. *A Rupture of the gravid Uterus terminating favourably.* By Mr. Charles Kite, Surgeon.

Art. 21. *Case of Angina Pectoris, with Remarks.* By Samuel Black, M. D. of Newry, in Ireland. This disease, which was first described by Dr. Heberden,

Heberden, or at least, to which he first gave the name of angina pectoris, is considered by Dr. Black, as being connected either with some organic degeneracy of the heart or great vessels, or with some mechanical pressure upon them, arising either from an effusion of fluids, or an accumulation of fat in the thorax, as has been shewn by dissections; or in the second place, the symptoms constituting the paroxysm are evidently of a spasmodic nature. The method of treatment adopted was founded on these principles, and though not able to prevent the fatal termination of the disease, yet gave sufficient proof, in the author's opinion, of the truth of the ideas above-mentioned. The changes observed on dissection do not account, we think, for the phenomena during life. The cartilages of the ribs had become bony. The heart appeared large, and unusually tender. The two coronary arteries were ossified through two inches of their length. The aorta, from its origin to its curvature, appeared considerably enlarged. There was no effusion, no unusual accumulation of fat, nor were the valves at all diseased.

Art. 22, *Curfory Remarks on the appearance of the Angina Scarlatina in the Spring of 1793.* By J. C. Lettsom, M. D.

Art. 23. Cases of several Women who had the Small Pox during Pregnancy; with an account of the manner in which the children appeared to have been affected. By Mr. C. Kite, Surgeon, Gravesend. Mr. Kite has here collected all the cases of the disease occurring during pregnancy, which have fallen under his own observation, or which he has been able to collect from the information of others, and from books. Many instances are adduced where the child was born with evident marks of the small-pox; and many others where the infant appeared not to have been infected, and which afterwards took the infection either naturally or by inoculation. The author thinks this admits of explanation, by supposing, that nature, for wise purposes, has rendered the bodies of very young infants extremely unsusceptible of this and other diseases; the principle of which may be, that the younger and weaker the infant is, the less of life it possesses, the less susceptibility it has also for these complaints.

Art. 24. Hints respecting the Prison of Newgate,
By J. C. Lettsom, M. D.

Art. 25. Case of extra-uterine abdominal Fœtus successfully extracted by an operation. By the late Dr. Charles M'Knight, of New York. The tumour of the abdomen lay considerably to the left side, on which side the incision was made, extending

tending from somewhat above the navel, and a little beyond the junction of the rectus and oblique muscles, to the pubis, and so near it as to divide one of the epigastric arteries, which however is not said to have occasioned any embarrassment. It appeared that the whole membranes and placenta had united to the neighbouring parts, and formed a separate sac, connected in all its parts to the internal surface of the peritonæum, so that when the child was extracted, the hand was not admitted to the surface of the intestines, but to the inside of the sac. And as the placenta must necessarily lie on the outside of this cavity, it, for that reason, could not be discovered and taken away, nor were any membranes delivered.

Art. 26. *History of the Treatment of certain Hæmorrhages.* By Jonathan Binns, M. D. of Liverpool. The method adopted by Dr. Binns, and which he employed in cases of profuse hæmorrhage from the large intestines, is by astrin-gent clysters injected nearly cold. This mode of treatment has been used with much success in those discharges of blood which often take place in the confluent small-pox, and fevers of a putrid tendency. One of the formulæ which the au-thor has employed in a child of about four years of age under the confluent small-pox, is as fol-lows :

R. decoct.

R. decoct. cort. Peruv. oz. 3. Tinct. ejusdem, scrup. 2. Mucil. gum Arab. scrup. 6. Acid. vitriol. dilut. gutt 16. m. f. enema, no griping nor other inconvenience has appeared to arise from their coldness.

Subjoined to this paper we have an account of a successful case of amaurosis. By Dr. James Gerard, of Liverpool. The patient, John Lawrence, 32 years of age, was attacked with the disease six months before, whilst in the West Indies. On his admission into the Liverpool Infirmary, he was ordered to use the cold bath, to take the Peruvian bark in powder, and three times a day to instil into the eyes a few drops of an infusion of Cayenne pepper in cold water, in the proportion of one grain to an ounce. It occasioned very considerable pain, and a plentiful flow of tears. In a few days he experienced evident benefit, and omitted the other remedies, confining himself to the infusion alone. In three weeks from the time of his admission, his sight was so perfectly restored, that he could see as well as he ever had done. This practice originated in accident. In the Bahama Islands several people were directed to husk some capsicum, amongst whom was a blind old man: during his being thus employed, one of his eyes itched, on rubbing it he had excessive pain, owing, as it was supposed, to a particle of pepper getting into his eye;

eye; to the man's great surprise, however, he could afterward see for a while. The hint was taken, he used an infusion of the pepper in the manner already described, and recovered his sight.

Art. 27. *A Case where Small Pox was communicated from the mother to the child in utero.* By William Turnbull, A. M. Surgeon, London. Mrs. White was inoculated in the seventh month of her pregnancy, and had a moderate eruption; on the ninth day from the accession of the eruption, she received a fall; from that period the motions of the child were no longer perceptible. On the seventeenth day she was taken in labour and delivered of a dead female child, covered with a great quantity of variolous pustules, which were prominent, and in a state of suppuration. Two children were inoculated with matter from this subject, and went through the disease regularly, and from these also others were inoculated.

Art. 28. *Some account of the Dysopia.* By Matthew Guthrie, M. D. Physician at Pittsburgh. This singular complaint has been long known in the interior parts of the Russian Empire to the peasants, who are subject to it, and who have named it *Kuritsha Slepota*, or the hen blindness, as the patient loses the use of his eyes at the setting

ting, and recovers it again only at the rising of the sun (even in summer, when there is, properly speaking, no night in those countries) like the domestic hen, according to the popular opinion of the country, which has given origin to the fanciful name of the disease. The *Kurilsha Slepota*, Dr. Guthrie observes, seems to be the *Dysopia Tenebrarum* of Cullen, and the *Amblyopia Crepuscularis* of Sauvages. It is not uncommon amongst the peasants, who are generally seized with it after much fatigue and watching, more especially during the hay harvest, when they generally work all night, to avoid the sultry heat of the day. It is attended with no pain or disagreeable sensation in the parts affected, nor can one distinguish, on the most strict examination of the eye, those who have from those who have not the disease. Its duration is only temporary, seldom lasting above a month or six weeks, even when the complaint is left to itself, but they know and use a village specific, which removes it in a week or fourteen days at farthest. This vegetable Dr. G. has not yet seen, but imagines it to be the *centaurea cyanus* of Linnæus, the corn flower, or blue bottle of Britain, which they drink in form of tea. The author supposes the disease to proceed from long continued action of light on the eye, possibly producing some degree of weakness, as it is cured by the bitter tonic infusion.

Dr.

Dr. Guthrie mentions also, on the authority of another person, a disease the very reverse of the one above-mentioned, viz. a number of soldiers blind during the meridian splendor of the sun, although they saw very well in the evening, or whilst it was obscured in the day.

Art. 29. *On the internal use of Silver in the Epilepsy.* By James Sims, M. D. What is here meant to be recommended is the *argentum nitratum*, or lunar caustic, in doses from a twentieth to an eighth part of a grain. This is said to have removed several cases of the disease, whilst in others it failed; but we meet with nothing which can lead us to expect success in one form of the disease more than in another. Like many other remedies it appears now and then to have succeeded.

To the volume is subjoined an appendix, containing miscellaneous communications, amongst which we have the following related by Mr. Malden, Surgeon, of Putney. Joseph Junks, a soldier in the 1st regiment of guards, was bitten March 1, 1792, by a mastiff bitch belonging to Joseph Wharton, in the thumb and fore finger of the right hand. Three days after he applied to the surgeons of the regiment, who cut the flesh off the thumb and finger quite to the bone, and kept the parts in suppuration some time, salivated

him, and gave him the pulvis antilyssus every morning in milk. He continued under their care about six weeks, when he was discharged as well, but at every new and full moon the parts healed, broke out afresh, and healed again without help in two or three days. He went on in this manner till the beginning of March 1793, when about the full of the moon the wounds again broke out, his arm swelled, he appeared very wild in his eyes, and in the utmost anxiety. In the extremity of his distress, a smith put some spirit of salt into the wound: he continued all night in great agony from the application: the next day he was much easier, the wound soon healed, and he has continued quite well ever since.

That the dog was mad, appears from the case of Joseph Wharton himself, who was bitten a little above the wrist of his right arm, through his coat and shirt, about a quarter of an hour after the former, and died of hydrophobia about seven weeks afterwards.

By the same author we have an account of the good effects of mercury in a spasmodic affection, chiefly of the muscles of the lower jaw; also a case of tænia cured by the accidental exhibition of oil of turpentine. The patient, a man between forty and fifty, had for thirteen years been subject

subject to the tape worm, a portion of which he voided every time he went to stool. Having received a fall he was advised to take two tea-spoonfulls of the oil: he was rather purged by the medicine, and voided one portion of the worm, measuring more than five yards, and a great number of small portions, since which time (three years and a half ago) he has not observed any more.

Besides the above we find a case of strangulated hernia, with gangrene of the intestine, opening in the groin, and which afterwards healed: a case of morbid retention of urine, with a description of the parts diseased, after death, by the same: a case wherein the application of nettles (*urtica diæcia*) to the whole surface of the body, restored animation which had been suspended at least an hour, from a stroke of lightning: a penetrating wound of the scull terminating fatally, by Mr. T. D. Ledward, Surgeon; a case of loss of speech (*aphonia Cull.*) recovered by drawing electrical sparks from the throat, by Dr. Perfect: a case of chorea sancti viti, cured by the vitriolum zinci, with observations on the locked jaw, and on the hydrophobia, by Dr. Andree of Hertford: lastly, an account of an epidemic catarrh, or influenza, which pervaded almost the whole of the United States of America in the spring of the year 1790, by Dr. John Warren, of Boston.

LIII.

Rules for recovering Persons recently drowned. In a Letter to the Rev. George Rogers, A. M. By R. Hamilton, of Ipswich. 8vo. pages 23. Price 6d. London, 1794. Longman.

THE following recapitulation contains all that is essential of the author's directions.

1. The body to be undressed after being taken to the nearest house, and wiped dry ; then placed on a table, covered with a matras, and let it be laid on the right side, in preference to the left; that the passage of the blood from the heart may be favoured by this position.
2. Expand the lungs as soon as possible ; much depends on this ; for this purpose let a pair of bellows be preferred to the blowing in air with a person's mouth, the air thus thrown in being viviated by passing from the lungs of the person employed in this operation.
3. Do not be anxious to place the body in a high degree of heat, though this has been advised and practised ; it is wrong ; a small degree is sufficient,

4. Let

4. Let no more persons be present than are absolutely necessary in the operation ; let all the doors and windows be open in the apartment, that the atmosphere may be freely admitted.
5. Apply friction *only* after the lungs have been expanded, and allowed to collapse again for some time, as already directed ; neither spirits, nor any other thing need be applied with friction, unless a little oil on the fingers.
6. No injections seem to be necessary ; avoid those of *tobacco* smoke at least, as *certainly* hurtful.
7. Emetics may also be dispensed with, unless where we knew before-hand that the stomach is loaded with food, or other matter.
8. Blood-letting seems unnecessary ; it is at best a doubtful remedy.
9. Electricity may prove highly beneficial in judicious hands, but hurtful in the hands of such as have not properly considered the subject of submersion.
10. Let long and diligent application be made of the means recommended, do not yield the *caſe*

case up as irretrievably lost sooner than after four or five hours of the above means.

11. The following rule is often, and *almost* always transgressed; let the body be taken up with as little tossing and agitation as possible; let no jolting or rolling be used with a view of emptying it of water, there is no water present, or next to none; and the heart which is the part chiefly loaded with blood, may be burst by this injudicious proceeding; perhaps more mischief has been done by tossing and rolling, than by any other part of injudicious treatment made use of.

LIV.

A Summary of the Pneumato-Chemical Theory, with a Table of its Nomenclature; intended as a Supplement to the Analysis of the New London Pharmacopæia. By Robert White, M. D. 12mo. pages 26: 1s. Cadell, London.

CHEMISTRY, with regard to its denominations and many of its principles, is become, as it were, a new science. The beautiful simplicity, and many convincing facts of the new system,

system, has compelled the assent of almost all the most able chemists of the age. Phlogiston, as the author observes, having for a length of time been admitted to be a principle in the composition of certain bodies, and the cause of particular modifications of matter, it required more than ordinary minds to doubt its existence; but since it has been discovered, that water is a compound body, and that the calx of a combustible body becomes heavier than that body was originally, another principle has been introduced, called oxygen; which more satisfactorily accounts for this, and many other extraordinary phenomena. The evidence against water being an element or simple body, and the necessity of accounting for the increase of weight in calcined bodies, were the occasion of much perplexity to the supporters of the phlogistic system; and the mode of solving the latter particular carried with it too great an air of sophistry to stand its ground. One of its most able defenders did advance, that phlogiston not only has no weight, but that it possesses positive levity; and that when taken from an absolutely heavy body, the body, by being deprived of this levity, becomes more heavy. Such a sophism, together with the further assertions, that it renders air elastic, and constitutes flame by a chemical combination with air, &c. &c. does not allow of demonstration; and, instead of supporting the cause of phlogiston,
has

has undoubtedly injured it; since no one circumstance is apt to sink the credit of an hypothesis more, than an attempt to support it by an inefficient proof.

The discoveries and experiments made by Dr. Black, Mr. Cavendish, and Dr. Priestley, respecting the properties of elastic fluids, were the more immediate causes of the late improvements in chemistry; and the two great discoveries of Mr. Cavendish, namely, the formation of water, by the combustion of inflammable gas and pure air; and of nitrous acid, by the application of electric sparks, to a mixture of pure and impure airs, have helped to enforce the pneumatic system.

Dr. White has properly distinguished between those facts which have been demonstrated, and those which are deduced from reasoning and analogy. Thus, he remarks, it has been advanced that phlogiston was never separately exhibited: it is the same with oxygen; on which account the latter principle is not yet positively established; for it is too well known, that the basis of human system is mostly speculative, and consequently subject to error, and to change.

With regard to the theory of acidification, we are told by M. Fourcroy, that it is a fact proved

proved by the most strict experiments, that sulphur cannot convert itself into sulphuric or vitriolic acid, unless once and a half of its weight of oxygen, or the base of vitriolic air, be combined with it; that in like manner, phosphorus cannot become phosphoric acid, nor charcoal carbonic acid or fixed air, unless combined with two parts and a half of oxygen, &c. So far the new doctrine of acidification is a recital of facts; but when from these particular facts, it is generally concluded, that oxygen is the constituent part of all acids, analogy leads us to think so, and then begins theory. Experiments therefore, accurately and repeatedly performed, are most likely to be the verification of it.

Professor Gadolin has observed, that as the nature of the basis of pure air, and the mode by which it combines itself with bodies have not been investigated, there is no absolute proof of its being brought about by the principles of acidity; it is also uncertain, whether it gives acidity, or by its combination, sets at liberty bodies possessed of, the properties of acids.

The Academy of Sciences at Paris, in their comparative remarks on the two principles, have long since acknowledged, that the new theory possessed advantages superior to those of the old;

because it agrees better with the mutual action of the principles of different bodies; and in consequence of the precision and exact calculation to which the perfection of modern apparatus has reduced the method of analysing. Another powerful evidence in favour of the new theory is the consentient judgment and practice of several men of eminence, who had strenuously supported the phlogistic system.

The summary of the new doctrines as given in the work before us, is both perspicuous and concise, and it will readily be seen does not admit of abridgement. In the following table are given the names of the preparations of the London Pharmacopœia, with their correspondent Latin appellations, according to the new Nomenclature.

OLEA.

Pharm Londin.

Olea expressa
— essentialia
Oleum animale

Nov. Nomenclat.

Olea fixa
— volatilia
Olcum animale volatile

SALES.

Acidum Distillatum
— acetosum
— muriaticum

Acidum acetosum
— aceticum
— muriaticum
— nitrosum

SALES.

Pharm Londin.

— nitrosum	
— vitriolicum	
Flores Benzoës	
Sal succini purificatus	
Ammonia præparata	
Aqua Ammoniæ puræ	
Kali præparatum	
Aqua Kali	
— Kali puri	
Kali purum	
Calx cum Kali puro	
Natron præparatum	
Aqua Ammoniæ acetatæ	
Kali acetatum	
— tartarifatum	
— vitriolatum	
Natron tartarifatum	
— vitriolatum	
— muriaticum five } Sal muriaticus	{
Nitrum purificatum	
Alumen	
Magnesia vitriolatum	
— alba	

Nov. Nomenclat.

— nitricum	
— sulphuricum	
— benzoicum sublimatum	
— succinium sublimatum	
Carbonas Ammoniacæ	
Ammoniaca	
Carbonas potassæ	
Potassa Carbonate potassæ	
Potassa	
Potassa fusca	
— cum Calce	
Carbonas Sodæ	
Acetis ammoniacalis	
— Potassæ	
Tartris Potassæ	
Sulphas Potassæ	
Tartris sodæ	
Sulphas sodæ	
Murias sodæ	
Nitras Potassæ, Nitrum	
{ Sulphas aluminæ five alumino-fus	
Sulphas Magnesiæ	
Carbonas Magnesiæ	

PREPARATA E SULPHURE.

Flores sulphuris	
Kali sulphuratum	
Sulphur præcipitatum	
Oleum sulphuratum	

Sulphur sublimatum	
Sulphuretum alkalinum	
Sulphur sublimatum	
Sulphuretum olei fixi	

PRÆPARATA EX ANTIMONIO.

Antimonium	Sulphuretum antimonii
Antimonium calcinatum	{ Oxydum Stibii album { nitro confectum
Antimonium muriatum	Murias Stibii
— tartarifatum	Tartris potassæ stibiatus
Antimonium vitrificatum	{ Oxydum Stibii sulphuratū { vitreum
Crocus Antimonii	{ Oxydum Stibii sulphuratū { semiwitreum
Sulphur Antimonii præ- cipitatum	{ { Oxydum Stibii sulphuratū aurantium

PRÆPARATA EX ARGENTO.

Argentum nitratum	Nitras Argenti fusus
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PRÆPARATA E FERRO.

Ferrum ammoniacalc	{ Ferrum ammoniacale subli- { matum
Ferri Rubigo	Carbonas Ferri
Ferrum tartarifatum	Tartris acidulus Ferri
— vitriolatum	Sulphas Ferri

PRÆPARATA EX HYDRARGYRO.

Hydrargyrus acetatus	Acetis Hydrargiri
— calcinatus	{ Oxydum Hydrargiri rubrum { per ignem
— muriatus	Murias Hydrargiri corrosivus
Calomelas	— sublimatus
Calx Hydrargyri alba	— Hydrargyri
Hydrargyrus muriatus mitis	— dulcis

Hydrax

PRÆPARATA EX HYDRARGYRO.

Hydrargyrus cum sulphure	{ Oxydum Hydrargiri sulphuratum nigrum
— sulphuratus ruber	{ Oxydum Hydrargiri sulphuratum rubrum
— nitratus ruber	{ Oxydum Hydrargyri rubrum acido nitrico confectum
— vitriolatus	{ Oxydum Hydrargiri luteum acido sulphurico confectum

PRÆPARATA E PLUMBO.

Plumbum ustum	Oxydum Plumbi
Minium	— rubrum
Lithargyrus	— semivitreum
Cerussa	{ Oxydum Plumbi album
Cerussa acetata	{ per acidum acetosum
Aqua Lithargyri acetata	Acetis Plumbi
	— Lithargiri

PRÆPARATUM E STANNO.

Stannum pulveratum	Oxydum Stanni cinereum
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PRÆPARATA E ZINCO.

Zincum calcinatum	Oxydum Zincii sublimatum
— vitriolatum	Sulphas Zincii

Spiritus distillatus	Alcohol
Tinctura Aloës	Alcohol Aloës, &c.
Æther vitriolicus	Æther sulphuricum
— nitrosus	— nitricum
Mucilago	Mucus

LV.

A Treatise on the Blood, Inflammation, and Gun-shot Wounds. By John Hunter. (Continued from Page 445.)

1. ACTION of the vessels in Inflammation.

The act of inflammation is commonly supposed to be an increased action of the vessels, and the action of vessels is generally considered to be contraction, either by their elastic or muscular coats; but it has been shewn that the elastic power also dilated them; and Mr. Hunter believes that their muscular power has also a similar effect. Simple contraction of the vessels does not account for the appearances in inflammation, which is certainly attended with an enlarged state of vessels, transmitting an unusually large quantity of blood; but the effect of contraction in the vessels must be, to lessen the quantity of fluids circulating through a part. This is a difficulty in the doctrine of inflammation which has not been explained, nor do we find any thing in the work before us, which removes it. The author observes, that the vessels, both arteries and veins, in the inflamed part are enlarged, from which we should suspect, that instead of an increased contraction, there was rather what would appear an increased

increased relaxion of their muscular powers, being, as we might suppose, left to the elasticity entirely. This would be reducing them to a state of paralysis simply; but the power of muscular contraction would seem to give way in inflammation, for they certainly dilate more in inflammation than the extent of the elastic power would allow. The contents of the circulation being thrown out upon such occasions, would confirm us in this opinion; and when we consider the whole of this as a necessary operation, we must suppose it something more than simply common relaxation: we must suppose it an action in the parts to produce an increase of size to answer particular purposes; and this Mr. Hunter terms the action of dilatation, as in the uterus in the time of utero-gestation, as well as the os tincæ in the time of labour. The increase of pain in the inflamed part in the diastole of the artery, and the ease received from pressure, are strong proofs, that it is not a contractile action of the muscular coat of the vessels; for in such a sensible state of vessels, if they contracted by their muscular power, the pain would be in their systole; for we find in all muscles which are in a state of great sensibility, that they cannot act without giving great pain. Thus an inflamed bladder becomes extremely painful when expelling its contents. Mr. Hunter would say, therefore,

fore, that in inflammation the muscular coat of the arteries does not contract.

2. *Of the colour, swelling, and pain of inflamed parts.* The red colour observable in inflammation, is generally gradually lost in the surrounding parts, if the inflammation be of the healthy kind; but in many cases it has a determined edge, as in the true erysipelas, and in some specific diseases, as in the small-pox, where its sudden termination is a sign of health. The swelling in inflammation arises as well from the greater distension of the vessels, as from the effusion into the cellular substance of serum and coagulating lymph. Inflammation increases the sensibility of parts. The quantity of natural sensibility is, Mr. Hunter believes, proportioned to the quantity of nerves, under any given circumstance; but diseased sensibility does not, he apprehends, take place at all in this proportion, but in proportion to the diseased action of the *materia vitæ*. Many parts of the body, when impressed, give peculiar sensations; and when those parts are injured, they likewise give pain peculiar to themselves. What will produce sickness in the stomach will produce pain in the colour. Pain when produced in a vital part is also different from that of other parts; the former oppresses, the latter often rouses. One cause of this variety of sensation, seems to consist, in
the

the author's opinion, in the different systems of *materia vitæ* with which these parts are supplied, having, probably, nerves peculiarly constructed for the purpose ; for all the parts which are supplied from the par vagum and intercostals, affect the patient with lowness of spirits from the first attack of the inflammation.

3. *Of the Heat of parts in Inflammation.* Mr. Hunter allows that inflammation increases the heat of parts, but has not found, from various observations and experiments, that a local inflammation can increase the local heat above the natural heat of the animal ; and when in parts whose natural heat is inferior to that which is at the source of circulation, it does not rise so high ; those animals too, which appear to have no power either of increase or decrease in health naturally, appear to be equally deficient in disease. In proof of this, various experiments are adduced.

4. *Of the production of Cold in Inflammation.* The production of cold is certainly an operation which the more perfect animals are endowed with. Coldness in disease, Mr. Hunter suspects, arises either from weakness, or a feel or consciousness of weakness in the whole constitution, or a part, joined with a peculiar mode of action at the time.

With regard to the propriety of attempting resolution of inflammation, the author observes, that in many cases it is unnecessary to check inflammation; in others it would be wrong; and in many very necessary; and probably the best guide is, its going further than appears from the cause to be salutary. Inflammation in consequence of accidents, ought in general to be resolved if possible. Inflammation in consequence only of a disease in a part, appears to be under the same circumstances with respect to resolution; but an inflammation arising from a preceding indisposition in the constitution (commonly called critical) has always been classed among those which should not be cured locally. If the inflammation is really a concentration of the constitutional complaint, and that by not allowing it to rest here, the same disposition is really diffused over the whole animal again, and at liberty to fix on some other part, it certainly would be better to encourage its stay; but in such cases it is always understood, that the inflammation is in such parts as will readily admit of a cure when suppuration takes place; for if the disease be otherwise situated, then the cure of the constitution by suppuration will be a mode of cure which will reflect back another disease upon it, under which it will sink.

There

There being in inflammation an increase of life, or an increased disposition to use with more violence the life which the machine or the part was in possession of; and also an increased size of vessels, and of course an increased circulation in the part inflamed, and in the constitution in general: the practice is reducible to two principles; one consisting in removing the cause of that action; the other in counteracting the effect. In the first, as we seldom know the cause, but only see the effect, except in some specific diseases, for which we have a specific remedy, we do not know with any degree of certainty how to act. With regard to the second, we find, from common observation, that many circumstances in life, as also many applications to parts, will call forth the contraction of the vessels; and whatever will do this, without irritation, will so far counteract the effect. Contraction of the vessels is produced either by producing weakness, which excites the action of contraction; or by such applications as produce contraction. The means of producing weakness are bleeding and purging, which, however, if carried too far, increase irritability, and therefore may become a cause of the increase of the inflammation. An essential part of the treatment also consists in lessening irritation, or disposition for action, which is to be done by sedatives, relaxants, anti-stimulants, &c. such as many sudorifics, an-

dynes, &c. Too much action, with small powers, may often, if not always, be classed with the irritable constitution, and bleeding should then be performed with great caution. When the inflammation is far from the source of circulation, the same precautions are necessary.

If we had medicines, the author observes, which, when given internally, were endowed with a power of making the vessels contract, such would be proper medicines. Bark has this property, and is of singular service in every inflammation attended with weakness. Preparations of lead, in very small doses, might be given also with advantage, in cases attended with great strength.

The author next presents the subject of the suppurative inflammation, which is followed by an account of the nature, properties, and uses of pus.

On the subject of the ulcerative inflammation, the author points out the office of the absorbents as commonly understood, and then advert's to their other important functions, the discovery of which are undoubtedly attributable to himself. It appears that these vessels are of much greater consequence in the body than has been imagined, and that they are often taking down what the arteries

teries had formerly built up; removing whole organs; becoming modellers of the form of the body while growing; also removing many diseased and dead parts, which were beyond the power of cure. Thus they either absorb matter which is foreign and extraneous, or they absorb the machine itself. A part which was of use in one stage of life, but which becomes entirely useless in another, is thus removed. This is evident in many animals; the thymus gland is removed; the ductus arteriosus, and the membrana pupillaris are removed. This process is perhaps more remarkable in the changes of the insect, than in other animals. Absorption, Mr. Hunter supposes to be performed by an active power in the mouths of the absorbents, which may have different modes of action, according to the substances they are to act upon, which are as various as the substances taken in by different animals, whose mouths vary accordingly. It is by an operation of this kind that useless parts are removed, as the alveolar processes, when the teeth drop out, or are removed by art, as also the fangs of the shedding teeth; and it is by these means also that ulcers are formed. The remote causes of the absorption of the animal itself are, 1st, pressure: 2d, from parts being considerably irritated by irritating substances: 3d, from parts being weakened: 4th, from parts being rendered useless: 5th, from parts becoming dead. Some parts

parts are more readily absorbed than others under similar circumstances ; such are the cellular and adipose membranes ; likewise newly formed parts, as healed sores, calluses of bone, tumours, &c.

An instance of the effects of pressure in producing absorption of solid parts is here related : a Highland soldier in the Dutch service, had a solid tumour formed, either in the substance of the brain, or, which Mr. Hunter thinks more probable, upon it, viz. in the pia mater, for it seemed to be covered by that membrane ; the tumour was oblong, above an inch thick, and two or more inches long ; it was sunk near its whole length into the brain, seemingly by the simple effects of pressure ; but the outer end of it by pressing against the dura mater, had produced the absorbing disposition in that membrane, which was entirely gone at that part. The same irritation from pressure had been given to the scull, which was also absorbed at that part ; after which the same disposition was continued on to the scalp. As these respective parts gave way, the tumour was pushed further and further out, so that its outer end came to be in the new passage the absorbents were making for it in the scalp, by which it would probably have been discharged in time, if the man had lived ; but it had become so connected with the vital parts, that the

man

man died before the parts could relieve themselves; while all those exterior parts were in a state of absorption, the internal parts which pressed upon the inner end of the tumour, did not in the least ulcerate.

The process of nature consequent to suppuration, and for the purpose of restoring parts to their original actions and structure is called granulation, consisting in the formation of new parts. The formation of granulations is not confined to a breach of solids where the parts have been allowed to suppurate, as either from accident, or abscess; but it takes place under other circumstances; for instance, when the first and second bond of union has failed, as in simple fractures. Mr. Hunter supposes that granulations are formed by an exudation of the coagulating lymph from the vessels, into which new substance both the old vessels extend, and also entirely new ones form, so that the granulations come to be very vascular, and indeed are more so than almost any other animal substance.

Treating of GUN-SHOT WOUNDS, the author begins by inquiring into the difference between those and common wounds. Gun-shot wounds are in general contused wounds, from which confusion there is most commonly a part of the solids surrounding the wound deadened, which is afterwards

wards thrown off in form of a slough, and which prevents such wounds from healing by the first intention. Gun-shot wounds, from the circumstance of commonly having a part killed, in general, do not inflame so readily as those from other accidents ; and this backwardness to inflame will be in the proportion that the quantity of deadened parts bears to the extent of the wound. Many of the varieties between one gun-shot wound and another, arise from the difference in the velocity in the projected body ; and they are principally the following :

“ If the velocity of the ball is small, then the mischief is less in all of them ; there is not so great a chance of their being compounded with fractures of the bones, &c. but if the velocity is sufficient to break the bone it hits, the bone will be much more splintered than if the velocity had been very considerable ; for where the velocity is very great, the ball, as it were, takes a piece out ; however, all this will also vary according to the hardness of the bone. In a hard bone the splinters will be the most frequent.

“ When the velocity is small, the direction of the wound produced by the ball, will, in common, not be so strait, therefore its direction not so easily ascertained, arising from the easy turn of the ball.

“ When

" When the velocity is small, the deadened part or slough is always less; for with a small velocity, a ball would only seem to divide parts, while when the velocity is great, the contrary must happen; from this circumstance it is, that the slough is larger at that orifice where the ball enters than where it comes out; and if the ball meets with a great deal of resistance in its passage through, there will very probably be no slough at all at its exit, which will be therefore only a lacerated wound.

" The greater the velocity of the ball, the cleaner it wounds the parts, so much so as almost to be similar to a cut with a sharp instrument: from which circumstance it might be imagined, that there should be a smaller slough; but I suspect, that a certain velocity given to the best cutting instrument, would produce a slough on the cut edges of the divided parts; for the divided parts not giving way equally to the velocity of the dividing body, must of course be proportionably bruised.

" Gun-shot wounds are attended with less bleeding than most others; however, some will be attended with this symptom more than others, even in the same part; this arises from the manner in which the wound is produced: bleeding arises from a vessel being cut or broken; but the free-

dom of bleeding arises from the manner in which this is done: if the artery is cut directly across, and it is done by a ball passing with a considerable velocity, it will bleed pretty freely; if bruised, and in some degree torn, then it will bleed less. When the velocity of the ball is small, the vessels will be principally torn, for they will have time to stretch before the continuity of their parts gives way; but if it is great, they will bleed more freely, because velocity will make up for want of sharpness.

“ According to the velocity of the ball so is the direction. When the velocity is great, the direction of the ball will be in general more in a strait line than when it is small; for under such circumstances the ball more easily overcomes obstructions, and therefore passes on in its first direction.

“ Velocity in the ball makes parts less capable of healing, than when it moves with a small velocity; therefore gun-shot.wounds in pretty thick parts are in general later of healing at the orifice where the ball enters, than at the orifice where it passes out; because it becomes in some degree a spent ball, the part having less flough, being only torn, which will often admit of being healed by the first intention.

. “ In

" In cases where the ball passes through, and in such a direction as to have one orifice more depending than the other, I have always found that the depending orifice healed soonest, and more certainly so if the ball came out that way, and also if the ball had been pretty much spent in its passage; therefore it will require art to keep the depending orifice open, if thought necessary: but this circumstance of being a spent ball, will not always happen, because if the person is near the gun when fired, the velocity of the ball will be very little diminished in its progress through the soft parts; and therefore it will have nearly the same velocity on both sides."

Of the Treatment of Gun-shot Wounds. It has been hitherto recommended, and almost universally practised, to open immediately upon their being received, or as soon as possible, the external orifice of all wounds made by musket balls, without making any discrimination between one wound and another. This practice Mr. Hunter condemns as a general rule. As a proof of the inutility of opening gun-shot wounds, unless indicated by some particular circumstances, the following cases are recited:

"Case I. A. B. was wounded in the thigh by two balls, one went quite through, the other

lodged somewhere in the thigh, and was not found while under our care.

" II. B. C. was shot through the chest; he spit blood for some time.

" III. C. D. was shot through the joint of the knee: the ball entered at the outer edge of the patella, crossed the joint under that bone, and came out through the inner condyle of the os femoris.

" IV. D. E. was shot in the arm: the ball entered at the inside of the insertion of the deltoid muscle, passed towards the head of the os humeri, then between the scapula and ribs, and lodged between the basis of the scapula and spinal processes, and was afterwards extracted. The man's arm was extended horizontally when the ball entered, which accounts for this direction.

" These four men had not any thing done to their wounds for four days after receiving them, as they had hid themselves in a farm-house all that time after we had taken possession of the island; and when they were brought to the hospital, their wounds were only dressed superficially, and they all got well.

" A gre-

"A grenadier of the 30th regiment was shot through the arm, the ball seemed to pass through the biceps muscle and the bone; he was taken prisoner by the French. The arm swelled considerably, they fomented it freely, and a superficial dressing was only applied. About a fortnight after the accident he made his escape, and came to our hospital; but by that time the swelling had quite subsided, and the wounds healed; there only remained a stiffness in the joint of the elbow, which went off by moving it."

The cases in which dilatation of the external wound may become necessary are, where an artery is wounded, and the patient is likely to become either too weak, or to lose his life from the loss of blood. Secondly in the wound of the head, where there is reason to suspect a fracture of the scull. Thirdly, where there are fractured bones in any part of the body that can be immediately extracted with advantage, and which would do much mischief if left. Fourthly, where there is some extraneous body which can with very little trouble be extracted. Fifthly, where some internal part is misplaced, which can be immediately replaced in its former position, as in wounds in the belly where the viscera are protruded. Lastly, where some vital part is pressed, so that its functions are lost or much impaired, such as will often happen from fractures
of

of the scull, ribs, sternum, &c. The following case illustrates this doctrine.

" Case I. I was sent for to an officer who was wounded in the cheek by a ball, and who had all the symptoms of an injured brain ; upon examining the parts, I found that the ball had passed directly backwards through the cheek bone ; therefore, from the symptoms and from the direction of the wound, I suspected that the ball had gone through the basis of the scull into the brain, or at least had produced a depression of the scull there : I enlarged the external wound, and with my fingers could feel the coronoid process of the lower jaw ; I found that the ball had not entered the scull, but had struck against it about the temporal process of the sphenoid bone, which it had broke, and afterwards passed down on the inside of the lower jaw. With small forceps I extracted all I could of the loose pieces of the bone ; he soon recovered from his stupor, and also from his wound. The ball afterwards caused an inflammation at the angle of the lower jaw, and was extracted. The good which I proposed by opening and searching for extraneous bodies and loose pieces of bone was the relieving the brain ; but as the ball had not entered the scull, and as none of the bones had been driven into the brain, it is most probable that I did

did no good by my opening; but that I could not foresee.

"Case II. An officer received a wound by a ball in the cheek, (which in this case was on the opposite side) the wound led backwards, as in the other; by putting my finger into the wound I felt the coronoid process of the lower jaw, as in the former; but he had no symptoms of an injured brain; I therefore advised not to open it, because the reason for opening in the preceding case did not exist here; my advice was complied with, and the wound did well, and rather better than the former, by healing sooner. The ball was never found, so far as I know."³⁴¹

The present practice is not to regard the balls themselves, and seldom or never to dilate upon their account, nor even to search much after them, and this practice is founded on experience; for it was found that balls, when obliged to be left, seldom did any harm when at rest, and when not in a vital part; for balls have been known to lie in the body for years, and are often never found at all, and yet the person has found no inconvenience.

Of the proper time for removing incurable parts.
Under this head, Mr. Hunter observes, that amputation of an extremity is almost the only operation

ration that can and is performed immediately on receiving the injury.

" As these injuries in the soldier are generally received at a distance from all care, except what may be called chirurgical, it is proper we should consider how far the one should be practised without the other. In general surgeons have not endeavoured to delay it till the patient has been housed, and put in the way of a cure, and therefore, it has been a common practice to amputate on the field of battle; nothing can be more improper than this practice, for the following reasons. In such a situation it is almost impossible for a surgeon, in many instances, to make himself sufficiently master of the case, so as to perform so capital an operation with propriety; and it admits of dispute, whether at any time, and in any place, amputation should be performed before the first inflammation is over: when a case is so violent as not to admit of a cure in any situation, it is a chance if the patient will be able to bear the consequent inflammation, therefore, in such a case it might appear at first sight, that the best practice would be to amputate at the very first; but if the patient is not able to support the inflammation arising from the accident, it is more than probable he would not be able to support the amputation and its consequences: on the other hand, if the case is such

such as will admit of being brought through the first inflammation, although not curable, we should certainly allow of it, for we may be assured, that the patient will be better able to bear the second.

" If the chances are so even, where common circumstances in life favour the amputation, how must it be where they do not? how must it be with a man, whose mind is in the height of agitation, arising from fatigue, fear, distress, &c.? These circumstances must add greatly to the consequent mischief, and cast the balance much in favor of forbearance.

" If it should be said, that agreeable to my argument, the same circumstances of agitation will render the accident itself more dangerous? I answer, that the amputation is a violence super-added to the injury; therefore heightens the danger, and when the injury alone proves fatal, it is by flower means.

" In the first case, it is only inflammation; in the second, it is inflammation, loss of substance, and most probably loss of more blood, as it is to be supposed that a good deal has been lost from the accident, not to mention the awkward manner in which it must be done.

" The only thing that can be said in favour of amputation on the field of battle is, that the patient may be moved with more ease without a limb, than with a shattered one ; however, experience is the best guide ; and I believe it is universally allowed by those whom we are to esteem the best judges, those who have had opportunity of making comparative observations, with men who have been wounded in the same battle, some where amputation had been performed immediately, and others where it had been left till all circumstances favoured the operation ; it has been found that few did well who had their limbs cut off on the field of battle ; while a much greater proportion have done well, in similar cases, who were allowed to go on till the first inflammation was over, and underwent amputation afterwards."

An exception however may arise to this from hæmorrhage, which may not admit of delay ; also it is of less consequence, whichsoever way it be treated, if the part to be amputated be an upper extremity.

The treatment of the constitution in gun-shot wounds does not materially differ from accidents arising from other causes. Bleeding will of course be now and then requisite, but not more so than in other cases.

" Bark

"Bark," the author observes, "is greatly recommended in gun-shot wounds, and with good reason; but it is ordered indiscriminately to all patients that have received such wounds, whatever the symptoms or constitution of the patient may be. That there is no better medicine for wounds in general; not only when the inflammation is gone off, but in the time of inflammation, if the patient is rather low; and, indeed, before it comes on, experience daily shews. Bark is to be looked upon as a strengthener, or regulator of the system, and an antispasmodic, both of which destroy irritation; the bark and gentle bleedings, when the pulse begins to rise, are the best treatment that I know of in inflammations that arise either from accidents or operations; one lessens the volume of the blood, and the increased animal powers at the time, which makes the circulation more free; so that the heart labours less, and simple circulation goes on more freely; the other gives to the blood that which makes it less irritating; makes the blood vessels do their proper offices, and gives to the nerves their proper sensations, which take off the fever."

LVI.

The History of two Cases of Ulcerated Cancer of the Mamma; one of which has been cured, the other much relieved by a new method of applying Carbonic Acid Air. By John Ewart, M. D. Bath. 8vo. p. 62, price 1s. 6d. Dilly, London, 1794.

NO apology can be necessary for laying before the public a method of treatment, which can neither endanger the life or health, or in any degree injure the persons on whom it may be tried; especially when it relates to a disease, the most desperate and deplorable. The subject of the first case here presented us was Susan Alford, 58 years of age, who was admitted an out-patient of the Bath City Infirmary on the 24th of June, 1794, afflicted with an ulcer in the upper part of the left mamma. The length of the ulcer, from the superior part of it to near the nipple, was almost five inches, and its breadth between three and four. Its greatest depth was about two inches; and from its lower end a sinus ran downwards under the skin, the size and extent of which, as well as the quantity of discharge from the sore, may be conceived, from her being in the habit of pressing out of it several times a day, from

from a table spoonful to two thirds of a small tea cupful of very foetid matter. The stench from the sore was at all times so very offensive, both to herself and to by-standers, as scarcely to be endured. The whole of the ulcerated surface reflected a shining glossy hue, without having any appearance of granulation. The ragged margin of the sore, and the substance of the mamma, to the distance of an inch or two around, but chiefly below it, were swelled and indurated, forming irregular knobs, which in many places seemed to adhere to the pectoral muscle beneath. The whole was attended with almost constant pricking pain, which she sometimes compared to a sensation of burning; and this frequently increased to such an extreme degree of agony as to make her scream out for hours together. Some ounces of blood were often discharged from the sore, which happened most generally when she was warm in bed, and was followed by a temporary abatement of the pain. Her appetite and strength were much impaired, her body had been progressively emaciating, and her spirits were sunk with long suffering, and the despair of finding relief. She complained of attacks of shivering, succeeded by heat and thirst, and afterwards by cold sweats, which particularly occurred in the night.

The

The disease originated in a blow received about fourteen years before, which was followed by a hard painful lump, and pursing of the skin over it. The tumor still advancing, an excrecence gradually began to appear on the skin which covered it, resembling (according to her own expression) an unripe mulberry, and which began to ulcerate about six years ago. This description, together with the opinions of most of the profession of Bath and Bristol, can leave no doubt as to the nature of the complaint, a point of the highest importance to be well ascertained.

Considering this case as a proper subject for experiment, Dr. Ewart gave directions for the following process. The neck of a bladder was cut off, so as to make a circular aperture into it of such dimensions as to correspond nearly with the size of the ulcer of the breast. A round hole of the same size was cut in a piece of soft leather, spread with adhesive plaster, and large enough to surround the ulcer; the cut end of the bladder was introduced through the hole in the leather, and its edges folded back and stuck to the plaster at the opposite side; forming somewhat of the shape of a round hat, the plaster resembling the rim, and the bladder, when distended, the crown. In order the more effectually to cement the adhesion of the bladder to the plaster, and to make it air-tight, narrow circular strips of plaster were applied

applied round their junction both inside and without. The large plaster was then fixed on the mamma, the aperture in its center with the bladder fitted to it being placed exactly over the ulcer, no part of which was touched by the plaster. A small orifice was made at the fundus of the bladder, sufficient to admit a tube of about a quarter of an inch diameter, which communicated with the top of an inverted cylinder, suspended upon water, which cylinder was filled with carbonic acid air. The bladder being closely squeezed, to expel from it the atmospheric air it contained, and the above-mentioned tube being inserted into the orifice formed to receive it, and tied by a ligature passed over the bladder, the inverted cylinder was pressed down in the water, so that the carbonic acid air was made to rush through the tube, and distend the bladder, the tube being then withdrawn, the orifice at the fundus of the bladder was tied, to prevent the escape of the carbonic acid air, which was thereby kept in contact with the ulcer. As often as the bladder collapsed, so as to shew that much of this air had got out, it was filled in the same manner as before, and this operation was repeated sometimes twice, sometimes three times a day according as it appeared necessary. It is a proof of this simple apparatus fully answering its purpose, that the bladder, when filled at night, was for the most part found

found to contain a considerable quantity of its air the following morning.

The application of the carbonic acid air first gave a sensation of coldness which was soon succeeded by a glowing warmth. The next day she was easier. The ulcer continued to wear a better appearance daily. The discharge gradually lessened, and assumed the colour and consistence of mild pus, the circumference of the sore contracting, and its cavity filling up. By the 19th of September the sinus was entirely filled up and the ulcer closed. No induration is left. During the ulcerated state, when the apparatus was removed, the patient always complained of considerable pain on exposure to the atmospheric air. It is rather a circumstance to be regretted that any other means should have been tried at the same time, as it must in a degree occasion some uncertainty as to the utility of the carbonic acid air. The sixteenth part of a grain of arsenic, prepared according to Dr. Fowler's directions, was given three times a day. This, however, was not used till some days had elapsed, and Mr. White, the apothecary at the infirmary, who applied the air, is positive that not only the smell from the sore was less foetid, but that its surface shewed a disposition to granulate, before any arsenic was given.

The subject of the second case was Mrs. A. wife of Mr. A. Banker in Bath. 57 years of age. Her disease began in the left breast, in May, 1791. It had been ulcerated for more than two years. The length of the ulcer was at this time full six inches, its breadth more than four and a half, and its size constantly increasing. The pain of the ulcer was extreme, and almost unceasing. She had not enjoyed one night of quiet repose, on account of it, for twelve Months. Her body was emaciated almost to a skeleton, and her appetite gone. On the 28th of July, 1794, carbonic air was applied to the ulcer, in the same way as in Alford's case. She was sensible of almost an immediate abatement of pain. On the 27th of September, (when the case was drawn up) she continued perfectly easy; is stronger than for two years past; appetite perfectly good and sleep undisturbed. Although the depth of the ulcer has filled up considerably, and its diameter has been contracting, yet in neither of these respects has it mended near so rapidly as Alford's sore did. Its dimentions now are one inch less in length, and half an inch less in breadth, than when she began to apply the gas. Such was the state of this disease at the publication of this pamphlet, and the future event is undoubtedly highly interesting. The mode of application adopted appears to be a very effectual one. The author towards the conclusion makes some ob-

servations on the supposed *modus operandi* of the remedy: but it will be time enough to discuss this point when we find the fact clearly ascertained.

LVII.

An Essay on the Malignant Pestilential Fever introduced into the West-Indian Islands from Boullam, on the Coast of Guinea, as it appeared in 1793 and 1794. By C. Chisholm, M. D. and Surgeon to his Majesty's Ordnance in Grenada. 8vo. 279 pages. 5s. boards. London, Dilly, 1795.

THE very great mortality which attended the epidemic, which is the subject of the present publication, during the last eighteen months, renders it an object extremely interesting to the medical philosopher and to humanity. Every attempt to investigate its nature, and improve its treatment, is therefore justly entitled to the public approbation. That the author of the present Treatise is eminently well qualified for the task he has undertaken, may be inferred, both from his opportunities for information, and from the manner in which the work itself has been executed.

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The work is prefaced by a very able account of Grenada, as far as relates to the face of the country, its productions, its diseases, and the state of the weather.

The disease appears to have been introduced by the Hankey merchantman, Captain Coxe. This ship sailed from England, in company with another ship, both chartered by the Sierra Leone Company, loaded with stores and adventurers for the projected colony at Boullam, about the beginning of April, 1792. During nine months that the ship lay at Boullam, the settlers, amounting to upwards of two hundred people, of whom women and children constituted a part, were obliged to live on board; and the rainy season coming on almost immediately after their arrival, and the heat being at the same time excessively great, they endeavoured to shelter themselves from both, by raising the sides of the ship several feet, and covering her with a wooden roof. In these circumstances it is evident cleanliness and ventilation could not be much attended to, and this, added to the depression of mind which arose from their want of success in their undertaking, must be considered as very sufficient causes of the malignant fever which broke out amongst them. The Hankey arrived at the Port of St. George in Grenada, on the 19th of February,

ruary, in the most distressed situation; and for a few nights lay in the Bay, but was afterwards brought into the Carenage.

" From this period," says the author, " we are to date the commencement of a disease, before, I believe, unknown in this country, and certainly unequalled in its destructive nature.

" *Nova pestis adeſt: cui nec virtute resisti,
Nec telis, armisve potest* —

OVID.

" The manner in which this disease was first communicated, and its subsequent progress, too clearly evinced its malignant and pestilential nature. A Captain Remington, an intimate acquaintance of Capt. Coxe's, was the first person who visited the Hankey, after her arrival in St. George's Bay. This person went on board of her in the evening after she anchored, and remained three days; at the end of which time he left St. George's, and proceeded in a drogher to Grenville Bay, where his ship, the Adventure, lay. He was seized with the malignant pestilential fever on the passage; and the violence of the symptoms increased so rapidly, as, on the third day, to put an end to his existence. The crew of the Defiance of Blythe Port, near Newcastle, were the next who suffered by visiting this ship: the mate, boatswain, and four sailors went on board the day after her arrival: the mate remained

mained either on deck or in the cabin, but the rest went below, and staid all night there. All of them were immediately seized with the fever, and died in three days. The mate was also taken ill, but, probably, from his having been less exposed to the virulence of the infection, he recovered. The crew of the ship Baillies, from the same imprudent civility or curiosity, were the next who suffered. These communicated to the ships nearest them; and it gradually spread from those nearest the mouth of the Carenage, where the Hankey for some time lay, to those at the bottom of it; not one escaping, in succession, whatever means the captains took to prevent it; even the smell and smoke of coal-tar, which is uncommonly pungent and penetrating, had no effect as a preventative; for the Hope, of London, then careening, and having her bottom paid with this bitumen, received the infection as extensively as the others, although none of her crew died of it. In the short space of time from the beginning of March to the end of May, 200 of about 500 sailors, who manned the ships in the regular trade, died of this fever. If to these we add, those who suffered on board Guinea ships, and other transient vessels, the number cannot fall short of 250; which is nearly one in three, or a third of all the sailors during about ten weeks in harbour. From the beginning of June till the middle of August, when
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the disease had nearly disappeared, the number of sailors were considerably diminished, by two fleets having sailed for Europe, but the mortality was proportionably great. Although so great a mortality naturally leads us to form a dreadful idea of the virulence of the contagion which gave rise to it, it must not remain unconsidered, that the predisposition of the class of men among whom it happened, was very great. The sailors were men from the age of fifteen to fifty ; and the circumstances which appeared to predispose them more strongly than other men to the action of the contagion, were violent exercise in the sun ; the immoderate use of undiluted new rum ; bathing in a state of intoxication, and often when violently heated ; sleeping on deck during the night. Other circumstances which did not depend so much on their own prudence, no doubt contributed very much to give the disease so very fatal a tendency : the damp heat between decks ; the excessive filth of most of the ships ; and the uncleanly state of the persons and clothes of the men themselves.

“ About the middle of April the disease began to appear on shore. The first house it shewed itself in, was that of Messrs. Stowewood and Co. situated close to the wharf ; and the infection was evidently introduced by a negro wench, who took in sailors clothes to wash. The whole of
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the family were successively afflicted with it; and by them communicated to all those with whom they had any intercourse. The difference of temperature, and free circulation of air; the temperament of the inhabitants, in general, disposing them to be acted on by the contagion; the superior care and attention to cleanliness, rendered the fever infinitely milder when it appeared among the inhabitants. The manner, however, in which it spread in town, clearly evinced its contagious nature; for all who, from friendship, business, or duty, communicated with the diseased, were themselves infected: and no instance occurred wherein the contagion could not be traced to its particular source. A few, who more sedulously avoided the houses where the infected actually were, escaped: but all the means which come under the general designation of Prophylactics, were, as may be readily conceived, totally inefficacious. Of these, the celebrated ‘Vinaigre de quatre Voleurs,’ or the Acetum Aromaticum of the Ed. Ph. was generally used, and always without success. Camphor, sewed into a small linen bag, and hung round the neck, was another of this tribe; but equally ineffectual. It will not appear extraordinary, that the lower classes of men, and those more especially of loose and debauched manners, should be the most subject to this disease; their greater exposition to the influence of infection,

which

which their business as tradesmen rendered necessary, contributed also not a little. But the description of men by far the most obnoxious to this contagion, and who suffered most from it, were those lately arrived from Europe; and of them, who had never before been in a hot climate. In general, those possessed of tense fibres and sanguineous temperament, were the most readily infected; and among whom the disease was most fatal. It is impossible to ascertain with precision the number of infected among the inhabitants, and the proportion of the deaths to that, or to the general number of white males and females in St. George's; but where certainty is not, conjecture, on good grounds, may be admitted. We may therefore say, that the proportion which the deaths bore to the sick, might have been about one to five; and the sick to the total number of white inhabitants, about one to about one and a half.

" That part of the garrison quartered nearest to where the Hankey lay, were the first of this class of men who received the infection. A barrack, containing nearly one half of the 45th regiment, was situated exactly to leeward of the Hankey, and distant from her about two hundred yards. It is not to be supposed, that this circumstance alone could be productive of a disease arising from contagion, but it was so in a secondary manner,

manner, by exciting the curiosity of some of the officers. One of these visited the Hankey, and, with two or three soldiers who rowed his boat, remained on board some time. The consequence of this imprudence was fatal to himself almost immediately after ; and, in a little time, to many of the men : all the officers and men were successively seized with the disease ; but it proved fatal only to recruits who had lately joined. The strength of the regiment at this time was 280, and of these 24 died ; so that the proportion was one to something less than twelve. The smallness of this proportion arose from the mode of treatment, as will be shewn hereafter.

" About the beginning of May, the disease made its appearance in the detachment of Royal Artillery : as that corps were quartered in a situation far removed from the focus of infection. It was evidently produced, however, by the communication which the gunners doing duty in Fort St. George, had with the 45th regiment ; and the predisposition of the men to receive infection as far as that could be induced by excesses in drinking, and other irregularities, was by no means less than that of the sailors and soldiers of the 45th regiment. Of 84 people belonging to the ordnance department at that time, about 56 were seized with the disease before the 1st of July, and of these five died ; a trifling

mortality, considering the nature of the complaint. All these men, however, had been about three years in the country, and consequently suffered less from the disease, than about 27 recruits who joined the artillery in July. Of 26 of these unfortunate men who were infected, 21 died before the middle of August: a dreadful instance of its peculiar tendency to prove fatal to strangers to the climate.

" About the first of June, the disease began to appear among the negroes of the estates in the neighbourhood of town; and the alarm this occasioned was in proportion to the interest of those concerned in the safety and welfare of the slaves; but our apprehensions were soon found groundless; for the disease did not spread much among them, nor was it marked with the fatality which attended it when it appeared among the whites. In the course of a month its progress was so trifling, that only about one in four was seized with it; and the proportion of its mortality was still more trifling, viz. one to 83. It is more than probable, that had not this disease been superadded to the cacoehymic complaint, called in this country Mal d'Estomac, in the two cases which terminated fatally, there would have been no mortality at all occasioned by it.

" About

" About the middle of June, the disease broke out in the 67th regiment, and among the artificers and labourers on Richmond-hill. The infection was communicated by some of the latter, who had visited their friends in town labouring under it. All were successively seized with it ; but it fell heavier on the officers than the men, several of the former being young men lately arrived from Europe. The proportion of deaths was about one to fifteen.

" The disease in the course of the months of May, June, and July, appeared in several distinct and distant parts of the country, whither the infection was carried by persons who had imprudently visited infected houses in town.

" But the infection was not confined to Grenada alone ; from this, as a focus, it spread to the other islands, to Jamaica, St. Domingo, and Philadelphia, by means of vessels on board of which the infection was retained by the clothes, more especially the woollen jackets of the deceased sailors.

" I have been thus particular in stating the progress of this malignant pestilential fever, chiefly with a view to demonstrate, 1st, That it was uncommonly infectious. 2d, That it arose from human contagion, heightened by various

causes to a pestilential degree of violence. And 3d, That, like the plague, it has been communicated in every instance, either by actual contact with an infected person; or, by breathing air charged with effluvia perspired or discharged from the lungs of an infected person; or by touching the clothes of or sleeping in a place where an infected person had been.

" It is curious, and may be useful to observe the gradation of this fatal malady, with respect to the various descriptions of people exposed to its infection. Neither age nor sex were exempted from its attack; but some were more obnoxious to it than others; and the colour had evidently much influence in determining its violence. The scale of its violence, or the gradation it observed with respect to the different classes of the inhabitants, appeared to be the following:

" 1. Sailors, more especially the robust and young; those least accustomed to the climate; and those most given to drinking new rum.

" 2. Soldiers, more especially recruits lately from Europe; and the most intemperate.

" 3. White males in general lately arrived; more especially young men from Europe.

" 4. All

" 4. All other white males, more especially the lower classes; and of them the most intemperate; those debilitated by recent sickness.

" 5. White females, more especially those connected with the shipping; and those lately from Europe.

" 6. People of colour, from Mustees to Cabres.

" 7. Negro-men, more especially sailors and porters.

" 8. Negro-women, more especially house-wenches.

" 9. Children, more especially those of colour.

" The following Table will shew at one view the Malignant Pestilential Fever; and the proportion of its mortality in the town, garrison, and neighbourhood of St. George, from March to the end of August, 1793, when it entirely disappeared."

Description of People.	Of the general Number Sick.	Of the Sick died.
Sailors - - - - -	1	3
45th Regiment - - - - -	1	12
67th Regiment - - - - -	1	15
Royal Artillery - - - - -	1 2 thirds	3
White Inhabitants - - - - -	1 1-half	5
People of Colour and Negroes*	4	83
General Proportion.	1 1/4	20

The author proceeds in the next place to describe the symptoms of the disease. The patient, without any previous complaint, suddenly becomes giddy, loses his eye-sight, falls down almost insensible, and in that state remains half an hour or upwards. The body is overspread with cold sweat; this is soon succeeded by intense heat, and quick, small, hard pulse; the head aches dreadfully, particularly the forehead and sinciput, which is generally accompanied with an oppressive pain in the right side and at the praecordia. His eyes are much inflamed, watery, protruded, and wildly rolling; the face much

* This calculation of the proportion of sick and mortality among the Negroes, arises from the following detail. The following estates were those only on which the Disease appeared: Point Maurice, or Molenier's, had a gang of 160; Grand-Mal, 179; Tempé, 147; Haut-Brion, 114. In all 600. Of these 165 had the Malignant Pestilential Fever, consequently the proportion of sick was nearly as 1 to 4; and of deaths, as only two died on Tempé, as 1 to about 83.

much flushed; heat at the pit of the stomach, with nausea, frequent retching and vomiting. Violent pain in the small of the back, and calves of the legs. During 12, 18, 24, or 36 hours, these symptoms continue increasing, except the quickness and hardness of the pulse, which do not change materially during that time, and are then succeeded by general coldness, cold sweat, a greater or less degree of coma and delirium, or a state very much resembling intoxication. Life in this state is lengthened out to sixty or ninety hours from the attack. A short interval of reason then takes place; the patient then considers himself better, and is for a moment flattered with the prospect of reviving; but a fit as sudden and unexpected as the first comes on, during which he foams at the mouth, rolls his eyes dreadfully, and throws out and pulls back his extremities in violent and quick alternate succession. In general the patient expires in this fit; but some have recovered from it, and continued rational for a few hours longer, when a second fit has carried them off. This has been the general progress of the disease in its worst form, nor has there been much variation from it. The symptoms which appeared particularly to distinguish this disease, were the uncommon suddenness of its attack; the remarkably acute pain in the loins and calves of the legs; the watery, inflamed, and rolling eye; the flushing of the

the face; the tendency to coma from the very onset; the peculiarity of the delirium attending; and the pain confined to the forehead, seldom extending to the temples, or even to the sinciput.

The coma was attended with a considerable and permanent dilatation of the pupils; and on examining the brain of two patients who died on the fifth day, Dr. Chisholm found a considerable quantity of serous fluid.

The appearance which marked the character of the disease most unequivocally, was a species of efflorescence, which is said to be peculiar to malignant and pestilential fevers: this resembled more patches of red or livid spots, than what is generally understood by the word petechiae, and appeared sometimes at the commencement of the low or comatosc state, but oftener a few hours before death. It was a very fatal symptom; for the author recollects no instance of recovery where it took place. The pulse was sometimes full in the beginning, which afforded a favourable prognostic. It never intermitted, and towards the close of the disease was sometimes so slow as to beat thirty times in a minute. The tongue was furred, and changed gradually from white to brown, and then black. Apthæ sometimes occurred, and were generally a bad symptom.

tom. There were two kinds of eruption about the lips, of a very opposite nature; one such as often appears about the termination of intermit-tents, and favourable; the other consisting of black spots all round the mouth, and indicating with certainty a fatal termination.

Frequent and profuse hæmorrhages took place from the nostrils, mouth, anus, and urethra, but have never been critical. Towards the close of life, the blood thus discharged from the anus has appeared granulous, with a black gritty sediment, and extremely offensive. In many instances, a violent pain arose in the testicles, which appeared much lessened in size and retracted, and excoriation of the scrotum often followed. A change of voice also was a remarkable symptom, it becoming weak and shrill. Suppression of urine and constipation were general, and the evacuations were all remarkably foetid. The thirst was not very considerable. Yellowness of the skin seldom happened. Most other diseases degenerated into, and partook very much of the nature of this.

Dr. Chisholm thinks that the infectious effluvia did not extend themselves beyond the distance of six or ten feet, as persons escaped infection living in the same house with the sick. Dr. Chisholm opened only five bodies himself. The intestines were

much inflamed, inflamed, and sphacelated. The liver had shrunk to less than half its natural size, was uncommonly flaccid, and of a colour approaching to buff, or a mixture of that and ashes; the gall bladder was flaccid and greyish, and contained little bile. The lungs were highly inflamed. The bladder was found much thickened and containing a considerable quantity of urine. Mr. White, mate to the 45th regiment, examined several bodies, and found the same appearances.

The author considers this disease as nearly allied to the plague. In many who recovered, there were carbuncles, numerous, large, and very troublesome. Swellings of the parotids, and buboes in the groin and armpits also occurred in several cases, but these generally terminated in death. He supposes it to be totally different from the yellow fever of the West Indies, which is endemic, and not contagious, as far as his observation goes.

Finding the total inefficacy of the usual method recommended in treating malignant fevers, the ingenious author founded his plan on the following principles. "It was evident," he says, "however indirectly marked by the symptoms, that the first stage of the fever was an inflammatory diathesis, peculiar in this respect, that its tendency

tendency to terminate in gangrene was infinitely greater than in any other disease I ever met with. It was no less evident that this stage was succeeded by one wherein nervous excitement and a putrescent diathesis were equally remarkable, and equally tended with an uncommon rapidity to the dissolution of the patient. It was also evident, that these diatheses had an extraordinary aptitude to run into each other, without showing any distinct termination of the one, or accession of the other; and it appeared, that the imprudent use, or the anticipation of the means of obviating either of these states or diatheses, inevitably hastened the progress of the other to its peculiar termination. Having these facts before me, it was clear, that if I at once went on the antiphlogistic plan, I would, with certainty, anticipate the fatal issue of the disease, by inducing an extreme degree of debility; and that, on the other hand, if I adopted at the commencement of my treatment, the antiseptic plan, I would inevitably increase the tendency of the existing inflammation to terminate in gangrene. Many proofs of both these fatal errors occurred daily for sometime after the introduction of the disease, and surely the practitioner could not be blamed when it is considered that the disease was new, and unknown in the climate. From the foregoing data, the following indications naturally resulted, and always guided me in my fu-

ture practice ; for however varied the remedies might be, still these were the points to be gained :

" 1. To discharge from the stomach and intestines acrid and offensive humours.

" 2. To obviate inflammatory diathesis, without producing a tendency to putrefaction.

" 3. To moderate the tendency to putrefaction, and to obviate it when actually present.

" 4. To restore tone and energy to the system."

To answer the first indication, a large wine-glass full of a solution of two grains of tartarized antimony, and an ounce and a half of natron vitriolatum in a pound and a half of cold water, was given every hour, until a sufficient effect was produced. To fulfil the second indication was infinitely more difficult. Bleeding could not be borne. Although the blood, drawn in the cases wherein this remedy was employed, was remarkably florid, and always threw up an inflammatory crust of greater or less thickness ; and although the pains seemed to undergo a temporary mitigation, yet the consequence at the expiration of a few hours was always fatal. Yet the patients were remarkably robust, florid, and generally in the vigour of life. Finding all the antiphlogistics

tics he had used totally ineffectual, he had recourse to mercury: he was induced to try this remedy, from the appearances of local inflammation in the liver, considering it as specific in those cases. A pill was given composed of five grains of calomel, two of the antimonial powder, and one of opium: and repeated eight times in the first four-and-twenty hours. If salivation was speedily raised, the danger was removed, and the patient recovered: But in order to effect this, it was frequently necessary to increase the quantity and number of the doses to an almost incredible extent. In one case, in which signs of recovery did not appear till the 21st day, fully 400 grains of calomel were given before the salivary glands were affected.

The method of practice adopted by Dr. Chisholme, met with no small degree of opposition from his fellow practitioners, who at length, however, mostly became converts to his plan. Their objections, the author, we think, has very judiciously answered. "The mere novelty of a practice," he observed, "was no sufficient objection to it. That we were taught by frequent experience, that medicines not long since considered as dangerous, and even poisonous, have been proved to be among the most efficacious in certain diseases; that the received theory of the action of mercury on the human system was, perhaps

haps not founded on established facts: that in many instances, particularly inflammatory complaints, it did not account for the effects produced by it: that in the present instance, it was evident there was a change brought about in the system by it, when pushed to salivation, which obviated inflammatory diathesis, without weakening, in a dangerous degree, the powers of the living principle: that this effect was illustrated, by what has constantly and uniformly happened to those who have been cured of hepatitis by salivation, their strength having been comparatively increased after the mercury had ceased to act: that the nature of pestilential fevers was by no means generally well understood; the uncertainty of physicians with respect to it, being a principal cause of their fatality: that we find where the stages of these diseases have been well defined, and an appropriate treatment judiciously adopted, the success of the practitioner has been proportionally great: that a remarkable peculiarity appeared during the inflammatory stage of pestilential fever, in the inflammation seizing particular organs; in its often infecting them without any external signs of such infection; in its extraordinary tendency to gangrene; in its aptitude to run into the putrescent state, when much debility was induced; in its exciting an increased afflux of blood to the brain, whereby an uncommon exhalation of serous fluid from
the

the extremities of the arteries of that organ taking place, compression ensued, of which the dilatation of the pupils of the eyes was an incontestable proof: that as the case was new, it could only be from what has been found useful in disorders of a nature nearly similar, we could make our selection of the means of cure; that the consideration of certain states of inflammation of the liver; of the confluent small-pox; and of the hydrocephalus internus; led us to give the preference to mercury: that the medical maxim 'de quo dubitare in ejusmodi re non oportet: satius est enim anceps auxilium experiri, quam nullum,' should always regulate our practice in dangerous and dubious cases: that however short the time might be, we found salivation was often induced early enough to save the patient; and that, although in certain states of the body, and in other climates, much difficulty might arise from the tardy action of mercury; yet that, in every species of inflammation, and perhaps more especially those, the tendency of which to terminate in gangrene is great, and in a hot climate, no such difficulty existed in general, unless the medicine were to act on the intestinal canal, and consequently pass off without entering into the circulating mass. These observations had their due weight on many; but the powerful influence of prejudice operating with all its baneful force on others, precluded conviction; although they had

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the mortifying experience of the fatal tendency of the disease treated in the European way."

Blisters, Peruvian Bark, and the other common remedies of fever were in this case ineffectual. The cortex angusturæ however was found a very useful remedy in restoring the strength, after the violence of the disease had been subdued.

Several cases are related at the end of the work, which illustrate the nature of this very fatal disease, and the success of the method of cure employed by Dr. Chisholmæ. Our readers will remark a striking similarity between the disease here treated of, and that described by Dr. Rush, of Philadelphia*, both with regard to the symptoms and method of treatment. The same comatose affection, indicating pressure on the brain; the same appearances of local inflammation; in both, at the commencement, a phlogistic state of the system; and in both, the eminent utility of mercury. Their principles and practice undoubtedly militate against the received theories in diseases of this nature, but we are not disposed to find fault with them on this ground.

LVIII.

* Vide Med. and Chir. Review for November 1791, p. 199.

LVIII.

An Inquiry into the Medicinal qualities and effects of aerated alkaline Water, illustrated by Experiments and Cases. By John Moncreiff, Apothecary, Honorary Member of the Royal Physical Society, Edin. 8vo. pages 205. p. 3s. boards, Robinsons, London, 1794.

THE world is indebted for the introduction of the aerated alkaline water into medical practice, to Mr. Colbourne of Bath. After whom, we have many accounts of its beneficial effects from Dr. Falconer and others. The power of alkaline salts in dissolving urinary calculi out of the body had been long known, but from their acrimonious properties, they could not be long used internally without prejudice to the general health. That these salts were rendered mild and inoffensive to the system by combination with fixed air was therefore undoubtedly a valuable discovery, if it should be found, that they did not thereby lose their solvent quality, and which, from much experience, it would appear they do not. We have first an account of the method of preparing the aerated alkaline water with the machine invented by Dr. Booth, which differs from the mode of preparing the

simple aerated water, only in adding to each pint of water in the middle glass of the machine a quarter of an ounce of the fixed vegetable alkali. When a proper machine for preparing the aerated alkaline water is not at hand, a medicine nearly similar, the author says, may be prepared in the following manner : dissolve 20 grains of salt of tartar in two or three table-spoonfuls of water ; add to the solution a table-spoonful of the juice of lemons. This mixture should be swallowed immediately and is the proper quantity for a dose, which may be repeated three or four times in a day. It may be doubted, we think, how far the effects of this would equal the other.

The quantity of the aerated alkaline water usually taken, is a gill thrice a day, before breakfast, dinner, and supper. When the stomach will bear a larger quantity, an English pint may be taken in a day. When it proves cold to the stomach, or occasions flatulency, the author recommends to add a tea-spoonful or two of brandy, or tincture of cardamoms ; but this is seldom necessary. When the irritation of the urinary passages is great, it may be of use, he says, to take a few drops of laudanum with each dose ; but this ought to be discontinued whenever there is an abatement of these painful symptoms. No particular diet or regimen is necessary to be observed, while using this medicine, farther than abstaining from acids, fat meat, and butter.

The

The following experiments shew the comparative solvent powers of the aerated alkaline water, simple aerated water, and pure water, on calculus. Eight grains of calculus were immersed in each of those substances, and the residuum weighed at different times after immersion: the loss of weight was as follows:

Time Immersed	Aerated Alkaline Water	Simple Aerated Water	Pure Water
8 Days	1 Grain	Nothing	$\frac{1}{2}$ Grain
16 Days	2 Grains	1 Grain	$\frac{1}{2}$ Grain
32 Days	$2\frac{1}{2}$ Grains	2 Grains	$\frac{2}{3}$ Grain
42 Days	$3\frac{1}{4}$ Grains	2 Grains	1 Grain
50 Days	4 Grains	$2\frac{1}{4}$ Grains	1 Grain

Comparative Experiments of the solvent powers of urine, made with the urine of a person using the aerated alkaline water, and with the urine of the same person, when not taking that medicine. A piece of calculus weighing 30 grains lost of its weight as follows:

Time Immersed	Aerated Alkaline Water	Not taking the Medicine.
8 Days	1 Grain	3 Grains
16 Days	4 Grains	5 Grains
32 Days	$5\frac{1}{2}$ Grains	5 Grains
42 Days	$7\frac{1}{2}$ Grains	
50 Days	$10\frac{1}{4}$ Grains	

The urine, in both these experiments, was changed twice every day. Before the calculus was weighed, it was dried before a gentle fire. Had there been time for continuing the first experiment, there is reason to believe that the calculus would have been entirely dissolved. After the calculus had been immersed in the urine for thirty two days, there appeared some worm-eaten-like holes in it; and, between that time and forty two days, a small fragment of it was separated; and at fifty days, when the experiment was stopt, the surface of the calculus was softened, and, on touching it, a considerable quantity of ochrey powder adhered to the fingers. The calculus, in both experiments, was the same, of a remarkable hard consistence, and of a very close texture. It may likewise be remarked, that no incrustation took place in the phial in which the first experiment was made, but a considerable one in that of the second.

Five grains of chalk-stone taken from a gouty person, lost after immersion for fifty days, in the aerated alkaline water, two grains and a half. An experiment is likewise related which seems to shew some power, though a weak one, in this medicine, of quickening the circulation of the blood; also some experiments on its antiseptic powers, which are of no importance.

The author next treats of the application of the aerated alkaline water to practice, in gravel, gout, stomachic and putrid disorders. In the latter cases it hardly deserves attention. The work is concluded with several cases, in proof of the utility of this remedy.

LIX.

THEOPHANI NONNI *Epitome de Curatione Morborum, Græce ac Latine.* Tom. 1, edidit I. O. Steph. Bernard. Gothæ, 1794. 8vo. pages 463. Price 10s. 6d. Boosey, London.

THE exact period when Theophanes lived is not ascertained. The work is inscribed to Constantine Porphyrogenitus; who, according to Lambecius,* was the seventh Emperor of that name, the son of Leo, and died in nine hundred and fifty nine. But Jer. Martius, who published an edition of this author in Greek and Latin, thinks the Constantine here meant (a *Porphyrogenitus* as well as the other) was the son of Constantine Ducas, who died in 1067. The point is however

* Vide Freind's Hist. of Phys. Vol. II. p. 253.

however of no great importance. This Epitome treats briefly of diseases in general; exhibiting first their supposed causes; in the next place describing the symptoms by which they may be distinguished; and lastly, lays down the method of cure. The merit of this work, (or rather of the author, for it contains the best opinions and practice of that age) is rather equivocal. Dr. Freind says,* this Epitome is little else than a transcript from *Ætius*, *Alexander*, and *Paulus*. For instance, what he says, when treating of *Carus*, of the anterior part of the brain, is taken from *Alexander* and *Paulus*. The direction to bleed in a fit of the stone, is evidently copied from the latter author, and from the former is transcribed the observation and distinction he makes about bleeding and purging in a pleurisy. Many of the medicines he recommends are in so many words described in *Ætius*. He is so free with the labours of his predecessors, that he even assumes their experience to himself: he gives a particular description of *melancholy*, and with the air of a great practitioner, is full of the good effects he had seen himself from the Armenian stone, and therefore prefers it to white Hellebore: he talks very sensibly about the bite of a mad dog, and remarks, that when once a hydrophobia comes on, he never, in all his experience met with an instance of recovery; and yet every word

* L. C.

word in the first case is transcribed from Alexander, and in the latter from Paulus.

Very different from this opinion of Dr. Freind, is the commendation bestowed on him by our present editor, M. Bernard. Many of the parts which appear to have been extracted from other authors, he supposes, may have been thrown together with the writings of Theophanes by mistake, especially as the different manuscripts do not all agree as to those which belong to him. M. Bernard is of opinion that the work contains much original matter, which is not to be found in the writers which preceded him. Indeed it was not to have been expected, that the author in drawing up a general epitome of diseases and their treatment, which he did at the command of the Emperor, could have avoided compilation altogether. In his perusal of books for the purposes of his work, when he met with descriptions sufficiently clear and concise, he would very naturally have used the words of the original, instead of substituting his own, which we think would have favoured more of plagiarism.

It appears from the bookseller's preface that the learned editor did not live to see his work published. It is to be compleated in a second volume, and may be considered as no incurious specimen of the theory and practice of the earlier ages.

LX.

Traité sur divers Accouchemens, &c. A Treatise on various Cases of Laborious Parturition, and on the Polypus of the Womb. By M. G. Herbiniaux, Surgeon-Accoucheur and Lithotomist, at Brussels. 2 vol. 8vo. pages 510. p. 10s. sewed. Boosey, London, 1794.

THE present is a republication of a work, the first volume of which appeared some years ago, chiefly on the subject of the lever, an improvement of which the author recommended to the public, but which met with much opposition from different quarters. The forceps had come into such general use, and so strongly, and perhaps blindly, were many of the most celebrated practitioners attached to it, that the attempt to supersede its use, in various cases, by the introduction of the lever, encountered the most strenuous opposition. Time, however, that most successful champion of truth, and vanquisher of error, has, in great measure, done, what was in vain long attempted by eloquence and argument. The lever is now employed by the ablest accoucheurs, in many instances to the exclusion of the more cumbrous and less successful forceps.

The

The lever was invented by RoonhuySEN, a Dutchman, about the middle of the seventeenth century. The inventor having gained much celebrity by its use, kept the matter a secret in his own family, and amongst a few to whom he told the discovery. It was not till the year 1753, that a fortunate occurrence put an end to this monopoly. Even the celebrated Ruyfch degraded his character so much as to purchase the secret, which he kept to his own private advantage, and his example was followed by several other practitioners, particularly de Bruyn, who rendered himself famous in Holland by its use. At length Messrs. de Vischer and Van-de-Poll, two respectable Physicians at Amsterdam, resolved to purchase the instrument, for the benevolent purpose of making it public, and for this purpose applied to Herman Vander Heyden, son-in-law to de Bruyn, who was in possession of the secret after the death of his father-in-law. The instrument was bought for a sum of 5000 livres, on condition that they should keep the knowledge of it to themselves. Not considering, however, a promise of this kind obligatory, they published an account of it in a work entitled, *Roonhuyziaansch geheim ontdekt*; i. e. *The Secret of RoonhuySEN revealed.*

M. Herbiniaux treats at length, of the structure of the lever of RoonhuySEN, and of its application.

plication. He enters very fully into the description of those cases to which it is adapted, in preference to the forceps, and endeavours to refute, with needless asperity, the objections which have been made to the use of this instrument, by various practitioners, especially of the French nation; and this part of the work is illustrated by well-executed plates.

In the second volume the author treats of polypi of the womb, and of the vagina. This disease, he says, exists much more frequently than is imagined, and is frequently confounded with a cancer of those parts. The most striking symptoms of a polypus are the following: a sense of general heat and uneasiness about the region of the uterus; flatulency of the abdomen; and frequent discharges of blood. To these are added, a discharge of a yellowish or greenish matter from the vagina, which sometimes becomes of a dark brown colour, and acquires by degrees, a very offensive smell. Masses of a fleshy matter are sometimes detached from the tumour, a weight is felt, bearing down on the pubes, and which often renders the discharge of urine and foeces difficult. The constant discharge of blood and other matters, at length exhaust the patient, and the disease becomes fatal. The distinction between polypus and other diseases of these parts can only be made by an examination by the touch

touch. The author therefore recommends, that in all cases of uterine hæmorrhage which are found frequently to recur, and are attended with serous or purulent discharges, an examination *per vaginam* should be had recourse to.

The removal of the disease may be effected by the application of a ligature around the neck of the tumour, which is to be straitened from time to time, until it falls off. The method of applying the ligature, with the description of the instruments necessary for accomplishing this, can only be understood by having recourse to the work itself, to which we therefore must refer the reader.

GENERAL REVIEW OF THE STATE OF MEDICINE.

SO multifarious and extensive is the Science of Medicine; its illustration and improvement are drawn from so many sources; so limited are our faculties, when we attempt to penetrate into the recesses of nature; that our knowledge on this subject must be ever exceedingly confined. Perfection in this science can never be hoped for. Ages may labour in the investigation, and all that can be said at last will be, that the sphere of our knowledge is somewhat enlarged.

larged, but that we are still ignorant. But although we cannot hope to attain perfection, improvement is undoubtedly within our reach. Industry and abilities will never want subjects for employment, nor fail to reward those who exert them. So extensive a field as that of Medicine, needs only to be cultivated to produce its fruits.

The art of Medicine depends for its improvement, in some measure, on the progress of all the other numerous Arts and Sciences. It borrows many of its lights from these, and must keep pace with them in their career. The sciences have been cultivated of late, as heretofore, not without success; nor will it be found, we trust, that medicine has been standing still. On a general review of the state of medicine for the last two years, we shall find sufficient proofs of the industry of its professors, and of much good fruits having attended their exertions.

Amongst

Amongst the sciences most immediately accessory to Medicine, CHEMISTRY has, undoubtedly, been most successfully cultivated. The new doctrines every where make their way, and few now but are converts to a system, which possesses every recommendation that simplicity and probability can give it. Mr. Kirwan and Dr. Black have acknowledged themselves, after a long combat in favour of the old doctrines, at length convinced ; and Doctor Priestley, in his last work, “ Experiments on the Generation of Air from Water,” adheres but feebly to the doctrine of phlogiston ; and, while he almost admits of the decomposition of water, and its composition from different airs, may almost be said to desert the system he professes to support. Dr. Pearson, in his valuable “ Translation and Explanation of the New French Nomenclature,” defends the new opinions in opposition to Dr. Priestley, with much ability and success. The full effect of the revolution in Chemistry on the Medical Art, has not yet been felt. Much attention
has,

has, however, been employed on the subject by Dr. Beddoes, whose genius and industry, cannot but prove of eminent utility to the art of medicine, in the line to which he has particularly devoted himself. He endeavours to bring back the views of physiologists, to the nature and constitution of the fluids, by shewing, that in some diseases, as consumption, and others of this class, there is a super-abundance of vital air, or oxygen, whilst in scurvy, this is deficient, and the inflammable air, or hydrogen abounds. We think, however, that these discoveries are carried too far, when they are applied to the explanation of the phenomena of low fevers, which are supposed by a writer on this subject, Dr. Wood, "Essay on the effects of Stimuli," to be connected with inflammable air in the blood, and who thinks the idea supported by the effects of nitre, because nitre is found to contain pure air.

BOTANY, also, has engaged the attention of several scientific men; amongst whom, stands

stands foremost the learned and favourite pupil of Linnæus, Dr. Smith. The work most nearly relating to our subject, is the "Medical Botany" of Dr. Woodville, now brought to a conclusion.

In ANATOMY, among others, we have a valuable Treatise of Bernhold, "Initia Doctrinæ de ossibus. ac. Ligamentis;" also Professor Schmidt, "de Nervis Lumbaribus." In PRACTICAL SURGERY several publications of value will be found. The method of treating lumbar abscesses pointed out by Mr. Abernethy, promises to be of much utility. Mr. Bell's Treatise on the hydrocele, &c. will be found to contain most of the information at present had on these subjects. Latta's System of Surgery, though perhaps a work not much wanted, yet must be considered as valuable in its kind. The diseases of the eyes, have received much illustration, from the ingenious Treatises on the subject by Mr. Ware. Mr. Hunter's "Treatise on the Blood, Inflammation, and

"Gun-shot Wounds," likewise claims an ample share of our regard. Though not containing much matter absolutely new, yet there will be found a great number of valuable observations, which are by no means generally known, and for which we are indebted to a long life, spent in laborious and patient investigation. Science has much to deplore in the loss of such a man. This branch of the art is also not a little indebted to the exertions of several foreign practitioners; it is sufficient to name M. M. Richter, Loeffler, Imbert de Lonnes, &c. together with the celebrated Mr. Default, of Paris, a translation of whose Chirurgical Journal, we are now in possession of.

MEDICAL PHILOSOPHY and the PRACTICE of MEDICINE have of late received considerable additions. On this subject Dr. Darwin's ZOONOMIA claims the most distinguished place: a work, which for ingenuity and true medical observation, has never been exceeded. Dr. Saunders's Treatise
on

on the Structure, Oeconomy, and Diseases of the Liver, although it has not added much to our former stock of knowledge, yet has placed in a clear and distinct point of view, whatever had been before known on the subject. Dr. Fordyce's History of Simple Fever will undoubtedly be considered as the best which has been yet delivered. Dr. Rush's Account of the Yellow Fever of Philadelphia, has thrown much light on the subject of Pestilential and Epidemic Diseases. He has combated with much success, in our opinion, a very dangerous prejudice, that of supposing all diseases of this kind to be of a putrid nature, and his opinions have received much confirmation from the late valuable Treatise of Dr. Chisholme on a very similar subject, "Essay on the malignant pestilential fever introduced into the West-Indian Islands from Boullam, on the coast of Guinea, in the years 1792 and 1793." The nature and properties of Opium have been investigated with much success by Dr.

Crumpe. The application of Quicksilver for the Cure of the symptoms arising from the poisonous Operation of Lead, as recommended by Mr. Clutterbuck, if confirmed by the concurrent testimony of other Practitioners, cannot fail to be of much utility. A number of other valuable Treatises by individuals might be here mentioned, did our limits permit, which will be found in the body of the work.

MIDWIFERY too has not been altogether neglected. The observations of M. M. Bland, Mulder, and Herbiniaux on the comparative utility of the Forceps and Lever, will be found deserving attention. The practice of Medicine, likewise, will receive much illustration, from the TRANSACTIONS of the various Philosophical and Medical Societies.

The subject of ANIMAL ELECTRICITY, which has of late been taken up by M. Galvani, in consequence of an accidental discovery of M. Cotugno, and pursued by

M. M.

M. M. Valli, Volta, Monro, Fowler, &c. is become a matter of curiosity, if not of utility. Like most other novelties, it has been carried, perhaps, to an extravagant length. This subject, however, we propose to take up in our future Numbers.

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